

RAG

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Highlights

■ **PC at the Olympics**, When the athletes go for the gold, IBM PCs will be there at the finish line, by Larry Press page 2

■ **Win a Macintosh at the Faire**, details and complete prize listing page 2



■ **Foreign Apples**, Microcomputers Come to the Aid of Developing Nations, by Lindsay Yarnall McGrath page 4

■ **Independent Sales Organizations (ISO) Conference Sessions** will be held daily during the Faire page 4

■ **PC-Aided Investing**, Part III: Portfolio Management Programs, by Jon Zenderman page 6

■ **Now is a Good Time to Buy a Computer**, by Jack C. Star page 7

■ **A Brief Look at Three Faire Speakers**: Larry Hughes, Walt Reynolds, and Peter Norton page 7

■ **Conference Program Schedule** page 8

■ **UNIX Systems Expo/84** will focus on new user markets page 10

■ **UNIX: What's It All About?** A thoughtful look at this powerful operating system by David Fiedler page 12

■ **Exhibitor List for the 9th West Coast Computer Faire** page 13

■ **A Complete Seminar Series** will be held on-site at the Faire to complement the Conference Program Course Descriptions page 14

Course Schedules and Registration Form page 15

Instructor Information page 18

■ **Microcomputer All-Star Days** will highlight 1984's Computer Faire Conference Program page 17

■ **User Groups** we've heard from page 19

■ **Educational Forums** give new users a chance to survey the marketplace and compare products page 21

■ **Letters to the RAG** page 31

■ **Hotel Reservation Form** page 32

Everything You Wanted to Know About the 9th West Coast Computer Faire... and More!

The 9th West Coast Computer Faire, now a four-day show, will be held March 22–25 in San Francisco's Civic Auditorium and Brooks Hall. The show will feature more than 300 hardware and software exhibitors, including DEC, IBM, TI, Apple, MicroPro and Radio Shack. This group of exhibitors is among the strongest we have ever had at the West Coast Computer Faire," said company President David Sudkin. The Faire this year will feature many innovations, which promise to make it the most dynamic and exciting yet.

Gates Kicks Off All-Star Series

Eighteen of the industry's leading pioneers and experts will participate in the Faire's Microcomputer All-Star Days, which will focus on the future of the computer industry. A complete listing of the All-Star speaking schedule is found on page 17.

Keynote speaker Bill Gates, Chief Executive Officer of Microsoft, will kick off the three-day series on Thursday, March 22, at 1:00 p.m. in the Crystal Ballroom of the San Francisco Hotel. Microsoft is one of the country's largest developers of microcomputer software. Gates will speak on user support. "The All-Star Series is a rare opportunity for attendees to hear the views of high-calibre industry leaders in one setting," said Sudkin.

Over 100 Speakers in Conference Program

The Faire will have a complete Conference Program going on during all four days of the Faire. Admission to the Faire includes entrance to the conference sessions as well as the

exhibits. The Conference Program of the 9th Faire will feature forums and regular conference sessions, speeches and discussions by industry executives, "demo-rooms," (see below), and a series of special conferences exclusively for ISOs (Independent Sales Organizations). The panels, forums and regular conference sessions will cover a comprehensive array of technical topics, including the PCjr, UNIX on Micros, C Compilers, User Interface, Word Processing, Business Graphics, and more. A complete listing is inside, starting on page 8.

Technical Seminar Series

Special training seminars will also be offered on several of the most popular software packages, operating systems, and compilers. Available to attendees for a fee, the seminars will be presented by two independent microcomputer education companies (details on page 14).

Win Prizes at the Faire

Several companies have donated valuable hardware and software products which will be awarded daily. A complete Macintosh computer system will be given away each day as grand prize. Other prizes are listed on page 2.

Faire Times and Registration

The hours of the Faire are:
Thursday, March 22, 11:00 a.m.–7:00 p.m.
Friday, March 23, 10:30 a.m.–6:00 p.m.
Saturday, March 24, 10:30 a.m.–6:00 p.m.
Sunday, March 25, 10:30 a.m.–5:00 p.m.

Tickets are \$20 for all four days, or \$12 per day. Price includes admission to the exhibits and to the complete conference program.

Tickets may be purchased ahead of time, from any of the retailers listed inside on page 12.

"Hands-On" Experience in Demo Rooms

Visitors to the 9th West Coast Computer Faire are encouraged to stop by the demonstration rooms and operate the industry's latest systems and peripherals designed by IBM, Apple, and the Digital Equipment Corporation.

IBM will demonstrate its PCjr product line, showing its "ease of use, friendliness, and applications versatility."

Visitors will also be able to try out the Apple Macintosh, which is touted as "the computer for the rest of us,"

Macintosh is considered by Apple to be powerful, yet easy to operate and relatively inexpensive. The Macintosh demo will feature the computer's graphic capabilities.

Digital will present three of its models in a variety of environments

The three participating companies will have representatives available to offer support and answer questions. Demo rooms will be located in the upper levels of Civic Auditorium, Rooms 303, 304, and 403, all four days of the Faire.

PCjr Unmasked

The developers of the IBM PCjr, from IBM's Entry Systems Division in Boca Raton, FL, will be making two presentations at the Computer Faire specifically intended for independent software developers interested in writing software for the PCjr.

The seminars will be held in Room 408 of the Civic Auditorium, from 3:00–5:00 p.m. on Friday, March 23, and Saturday, March 24.

The Friday seminar is titled, "IBM PCjr: From the Inside Out," and will provide an overview of PCjr architecture, PCjr ROM BIOS and software compatibility, application compatibility guidelines, and the personal communications manager.

The Saturday seminar, "Crossing International Boundaries with the PCjr," will focus on PCjr's operation with foreign languages and other aspects of international compatibility, as well as discussing the recently announced software support center.

Showdates

9th West Coast Computer Faire

San Francisco
March 22–25, 1984

The East Coast Computer Faire

Boston
October 2–4, 1984

The 2nd PC Faire

San Francisco
October 25–28, 1984

UNIX™ Systems Expo/84

Los Angeles
September 11–14, 1984

PC at the Olympics

When the athletes go for the gold, IBM PCs will be there at the finish line.

by Larry Press

Larry Press is a Contributing Editor for *PC World*. He is also president of a Southern California microcomputer consulting firm.

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How do you manage 10,000 athletes, 8000 reporters, 44,300 employees, 7 million spectators, 23 sporting events, and \$472 million? With a PC, of course.

The Los Angeles Olympic Organizing Committee (LAOOC) is using a variety of computers to plan and run the 1984 Olympic Games. But the PC figures prominently in the day-to-day planning for next year's biggest sporting event.

IBM is one of the 30 to 35 corporate sponsors of the 1984 Olympic Games. Included in Big Blue's \$4 million cash, equipment, and support service contribution are 100 PCs, so we visited the LAOOC headquarters to see how the computers are being used.

Surmounting All Obstacles

Mike Mount has lots of plans to make. Even more importantly, he has lots of plans to carry out. Mount is the LAOOC vice-president for Support Operations. Support Operations has responsibility for the overall planning—everything from security to hot meals for athletes—for the 16-day summer event. In addition, Mount is directly responsible for technology, press and TV operations, and accreditation (badging) for all athletes and employees during the Games.

Forty-year-old Mount began his job on October 1 of last year, but he has been working with the LAOOC since June of 1979. Mount was an organization consultant with Arthur Young and Company, the auditing and consulting firm hired by the LAOOC. Committee members liked Mount's work and enticed him into leaving the accounting firm.

"It was a chance to build a large organization in a short period of time," Mount explained. "It meant installing an entire computer system in a year to a year and a half, training a lot of people, and having everything work smoothly during that two-week period. I looked at it as an exciting managerial challenge."

The Games Plan

Mount's office is in the LAOOC's headquarters, located in a new building on the edge of the UCLA campus. The building has the atmosphere of an aerospace programming shop—security guards and badges, modular office furniture, and a temperature-controlled environment. Nearly every desk has a PC or an IBM Displaywriter on it.

"We made a decision to grow much more slowly than other Olympic Committees," Mount said, noting that the committee staff for the 1988 Games in Seoul, South Korea, is already larger than the present LAOOC staff. But the Los Angeles organizing committee is bound by law to run a tight ship—the voters of Los Angeles

approved a city charter provision in 1978 that forbids any capital expenditures by the city on the Olympics that would not, by binding legal commitment, be paid back.

"We are avoiding what happened in Montreal," Mount said. The 1976 Olympic Games in the Canadian city were budgeted at \$225 million but wound up costing \$1.2 billion. Montreal taxpayers will be paying for the Games until 1996. The Los Angeles Games are budgeted at \$472 million.

With such money-saving consciousness it is not surprising that budgeting and record keeping are among the main duties of the Olympic PCs. In fact, the PCs are used to manage and track the LAOOC's financial lifeline, its investment portfolio from the TV rights, tickets, and sponsorship monies. The nature and deadline of the committee's work necessitates that these be short-term investments. Each committee department produces its budget reports and performs "what if" analyses on the PC. Multiplan is the preferred spreadsheet program. Budget control at the 23 sports sites and two Olympic Villages will be handled by on-site PCs during the Games.

One of the early uses Mount found for the PC was to model ticket prices for the approximately 7 million tickets that will be sold for the sporting event. Mount explored various ticket-pricing options for four to six weeks before finding a system that met both the International Olympic Committee and the LAOOC requirements. Tickets for the events range from \$3 to \$95, with an average price of \$17.

Mount said he is proud of the ticketing scheme. He pointed out that ticket order forms became available simultaneously across the country in mid-June. (Seventy percent of the tickets will be sold to people in the United States.) Sixty days after mail-order forms were accepted, a random drawing was held to allot tickets for high-demand events; tickets to other events will be sold in the order in which forms are received. Mount had to fill out a ticket order form like all potential spectators. "There are no freebies for employees, executives, or 'special' people like Frank Sinatra," he said. An IBM System 38 is being used to keep track of ticket sales.

East Meets West

The committee found an early use for the PCs several months ago when Olympic national committee representatives of participating countries met at the Biltmore Hotel in Los Angeles to sort out details such as the number of people coming with each Olympic team, arrival time, point of entry, and village and room reservations. PCs were used to enter and store each nation's data and allowed LAOOC members to do the necessary schedule juggling and bargain making that such a project requires.

PCs were also used to demonstrate how teams can reserve training sites by electronic mail during the Games. The electronic message system will be handled by the official telecommunications sponsors, AT&T and several of its subsidiaries.

Tracking the Course

Another use for the PC is in personnel and task management. Full-time, paid LAOOC staff now numbers between 500 and 600 people but will grow to 1300 by the time of the Games. An additional 43,000 people will be short-term or contracted employees and Olympics volunteers. Comshare's Profile program is used to match the committee staff resources and needs.

APERT (program evaluation and review technique) chart produced on a PC gives Mount and other LAOOC executives detailed analyses of the Olympics preparation activities. The scheduling chart displays the information sequentially, showing the relationship among the activities so that jobs are done in a logical and time-saving manner. Originally Mount set up a mainframe-based project control system, but it turned out to be too cumbersome and difficult to operate.

Dry Run

The LAOOC coordinated seven world-class competitions at Olympics facilities in Southern California from May through September of this year. The events—swimming, diving, water polo, synchronized swimming, cycling, canoeing, and rowing—provided a good opportunity to test the new facilities built for the Games and to fine-tune preparations for next summer. PCs were used, as they will be in 1984, for seeding certain events. LAOOC workers also discovered that the PC at the velodrome could be used in the cycling races. One of the members wrote a program for the PC that computes racers' mph speed based on lap time. Mount said that it was the first time such speeds had been posted in cycling events.

PCs will also be assisting in the archery contests. Judges will exam-

ine targets and mark points on scanner cards which will be read and tabulated by PCs equipped with Chatsworth Data Corp's GMR 2000 Optical Card Readers. "Archery is certainly not the most technological sport, but the results will come five times faster with the computers," Mount said.

Large Computers

The LAOOC appears to have found a computer for every task. McDonnell-Douglas Automation Co. (MC Auto) is the official supplier of results computer services for the 1984 Games and as such will process data and tabulate results for all individual and team events.

Accounting is among the services the Transamerica Corp. computers are providing. Transamerica installed and is operating a general ledger, accounts payable, accounts receivable, and inventory control system for the LAOOC.

AT&T is providing approximately 2000 terminals at the Olympic Villages and sports venues for the electronic message system and Telex services for reporters and Olympics and team officials. And IBM will provide an audio distribution system that digitally records telephone messages left for athletes and officials.

So what happens after August 12, 1984? "We close the door, go home, and recuperate," Mount joked. The winding down and mopping up operation will begin as soon as the Games are over, he said. The staff will dwindle to 100 people by next December, and by then much of the equipment will be returned to the sponsors and suppliers. But Mount admitted that he hasn't taken much time to plan that phase of the operation. "We are all focusing on what it takes to get the job done now."

A "Mac" a Day to be Given Away!

Win a Macintosh at the Faire

Four complete Macintosh computer systems will be given away as daily grand prizes during the 9th West Coast Computer Faire.

To be eligible to win a Macintosh or one of the other prizes you must turn in a completed registration form at the Official Program Guide counter when you enter the show.

The companies listed below have donated prizes which will also be given away during the Faire.

800-Software

- 1 per day MicroPro WordStar® or InfoStar®

Amdek Corp.

- Color 13" composite color monitor with built-in speaker, audio amplifier, and front controls

AutoDesk

- AutoCAD—a microcomputer-aided drafting and design program

Datamost

- 1 per day complete set of game software and books compatible with Apple, Commodore, or Atari

dilithium Press

- Choice of 10 books and/or software from catalog

Osborne

- Osborne I computer—the original design with software & manual included

Rocky Mountain Software Systems

- 2 per day NewWord word processing package, A WordStar compatible word processor

Sirtech

- General assortment of recreational games

Transend Corp.

- 2 Transend II's, a powerful communications software package for the Apple computer
- 2 Transend PC Plus's, an electronic mail/communications package for the IBM PC

9th West Coast Computer Faire

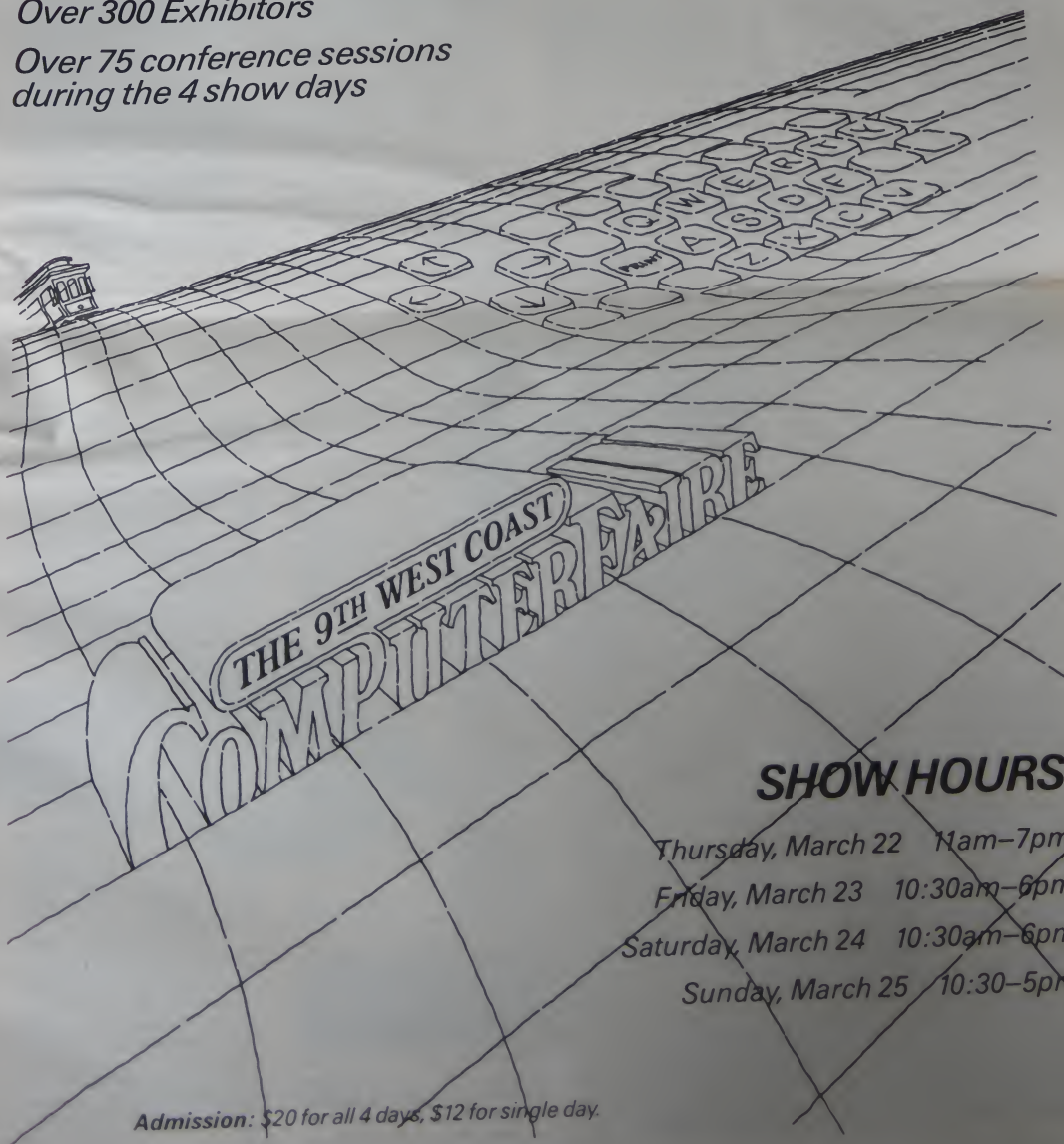
March 22-25, 1984

SAN FRANCISCO

Civic Auditorium & Brooks Hall

Over 300 Exhibitors

Over 75 conference sessions
during the 4 show days



SHOW HOURS

Thursday, March 22 11am-7pm

Friday, March 23 10:30am-6pm

Saturday, March 24 10:30am-6pm

Sunday, March 25 10:30-5pm

Admission: \$20 for all 4 days, \$12 for single day.

Foreign Apples

Microcomputers Come to the Aid of Developing Nations

by Lindsay Yarnall McGrath

Most Americans think foreign aid consists of sacks of sorghum, building materials for a school, or medical supplies for a hospital. Few would add microcomputer technology to the list of materials essential for a developing country. But that attitude is changing. An innovative Agency for International Development project called RAPID II is bringing Apple computers to emerging nations where they are being used as important development tools.

RAPID, or "Resources for the Awareness of Population Impact on Development," uses Apples to show presidents, kings, and ministers of developing nations how population growth will affect their countries' abilities to achieve major social and economic goals. Using Apple IIe computers with specially written software, analysts prepare a 20-year growth profile for each client country and present their findings to high ranking government officials using a colorful,

interactive graphics program.

When the analysts board the plane for home, they often leave an Apple system behind, so people in the developing nation can continue the population planning work. Since 1978, a total of 43 RAPID analyses have been made, 35 of which have included the high-level presentations, and Apples have been installed in 22 countries.

"There is no other A.I.D. program like this," says Adrienne Allison, a social science analyst with the Agency's Office of Population. "It is one of our more successful projects. A country's demographic situation is a good indicator of how its economic development is going to go."

The analysts who produce the RAPID studies are part of The Futures Group, an international consulting firm with offices in Washington, D.C. and Glastonbury, Connecticut, that has worked under contract with the Agency's Office of Population since the project began.

RAPID presentations have been seen in developing countries around the world. The late Egyptian President, Anwar Sadat, was the first head of state to see a RAPID presentation in January 1981. His successor, Hosni Mubarak, saw one soon after he came into office. Pakistani President Zia, after seeing the population presentation, called for a "jihad" or holy war, against excessive population growth. In the small African country of Cameroon, the prime minister proposed a toast to "the mastery of Cameroon's demographic problems" after seeing a RAPID presentation.

In many developing nations the birth rate can run as high as 3 percent. While that figure might make an economist monitoring inflation gleeful, it's viewed with concern by demographers.

Growing at 3 percent per year, the population of a country will double in 23 years. That means all the resources in the country will have to be doubled too, just to stay even. Some developing countries grow even faster. Iran's population skyrocketed from 17 to 35 million in 16 years. This kind of population pressure, Futures Group analysts say, forces emerging nations to give up development in their struggle to survive.

"The dynamics built into population growth are such that a majority of countries are going to be overburdened with population—if they're not already now, then in 20 years—and they're going to have serious problems," says Dr. Robert Smith, vice president of The Futures Group.

Futures Group staff members use Apples in every phase of their RAPID work. Using special analytical software, they study the effect population growth will have on a variety of social and economic factors. The software, written in BASIC, features separate analytical modules joined together by the Apple chaining program.

A RAPID presentation reviews a country's basic demographic facts and then illustrates graphically how these will effect the country socially and economically. Basic demographic factors include the country's fertility level, birth and death rates and the resulting natural increase in population, age distribution, migration levels, and more. Once these are reviewed, projections of future population and age distribution are made under three assumptions—continued high population growth, intermediate, and low population growth.

The RAPID analysis then projects the effect of each of these demographic scenarios on a series of economic and social areas, including the country's gross national products, food and agricultural production, budget, international debt, and more.

RAPID's presentation software displays these projections in simple, appealing graphics. The interactive program is a kind of sociological spreadsheet that lets users do what-if analysis on the spot.

Using Apples in the RAPID project

is exciting, say Futures Group analysts, but bringing microcomputers into developing countries can create some unexpected problems. They've had Apples seized by dubious airport customs officials, had to scramble to find replacement parts for micros that break down, and have grappled with enough power problems to carry system savers or back-up computers whenever possible.

"We've had the vice-president of one country have to get our computer out of bond so we could make a presentation to the president," says Smith. "When we went to Yemen and set up the computer for a presentation, we blew the motherboard. We didn't have a spare computer with us, but were able to get another Apple within two hours by going to the international school there."

When The Futures Group staff heads home, the Apple they leave behind may be the only microcomputer people in the developing nation have ever seen. That can give a whole new meaning to the term "new user." If American novice computer users think their lives are hard, they should talk to a new user in Mali. There are no manufacturer's hotlines, no large user support groups, no dealer across town to go to for help with a flaky chip or disk drive.

Sometimes, foreign users send their Apples back to The Futures Group for servicing, or ask if a technician can make a house call to revive a sick computer system.

The Futures Group donated an Apple to the National Institute for Statistics and Demographics in Upper Volta, a country in northwest Africa. About a month after the donation, Adrienne Allison received an urgent cable explaining that the computer wouldn't load and asking if someone could drop by and lend a hand.

They were in luck. Maurice Middleburg, a Group technician who was on his way to Mali, stopped by and fixed the Apple.

"We received a long cable which said 'Thanks to The Futures Group for having the technician come by. Maurice Middleburg sat down in front of the computer and was heard to mutter an incantation in computerese, and abracadabra, the computer was fixed!'" said Allison.

Many new RAPID presentations are planned. The project has been received enthusiastically, analysts say, but it is too early to assess its full impact on population planning in the developing world.

"The whole process of policy-making in the population area is an incredibly long and involved one, and nobody is going to make a change overnight just because we went in and made a presentation," says John Stover, a senior member of the project. "But to the extent that we can contribute to the process and, by leaving computers in these countries, encourage people to think about population, we are having an effect on policy."

ISO Sessions

The 9th West Coast Computer Faire will, for the first time, host special conference sessions for Independent Sales Organizations (ISOs), from 9:00 to 10:30 a.m. daily during the show. Intended exclusively for resellers, these conferences will take place before the doors open to the general public.

The ISO conferences will be specifically directed to meet the informational needs of dealers, distributors, and retailers of hardware and software, and are intended to help ISOs develop applicable marketing strategies by giving them the most current information on the evolving microcomputer industry.

Developing An Aftermarket for PC Products

Friday, March 23, 9:00a.m., Gold Room, Holiday Inn

Moderator: Mike Hogan, Editor of Computer Merchandising Magazine

As personal computers grow in market penetration, the aftermarket for software and peripheral add-ons will be as crucial as the initial sale. How can ISOs develop and implement a strategy that builds repeat sales?

Multi-User Systems: New Sales Opportunity

Friday, March 23, 9:00a.m., Crystal Ballroom, San Francisco Hotel

Moderator: Phil Missimore

As personal computers evolve into workstations, the idea of multi-user systems becomes more attractive. What must ISOs do in order to sell more than just computers out of a box?

Merchandising Training Programs to Business and Professional Computer Users

Saturday, March 24, 9:00a.m., Gold Room, Holiday Inn

Moderator: Ronnie Gunnerson, Editor of Computer Merchandising Magazine

Getting over the fear of computers will be a major hurdle for both small businessmen and corporate executives alike. What can ISOs do to alleviate that fear and build profit centers in the process?

Software Distribution: What's Really Happening?

Saturday, March 24, 9:00a.m., Crystal Ballroom, San Francisco Hotel

Will electronic software distribution become the new mail-order? Will tire-kicking become passe? How will software stores fare?

Computer Literacy in the Home: Tapping In

Sunday, March 25, 10:30a.m., Gold Room, Holiday Inn

Moderator: Jim McCullaugh, Editor of Software Merchandising Magazine

Is the home computer the violin of the 1980's? How can the ISOs provide products and services that will marry education and computers in the home?

Get
Your
Hands
On a
Macintosh™
at the
West Coast
Computer
Faire.

The wait is finally over! Now you can get your hands on Apple's new personal computer and discover what this amazing machine can do for you!



Hands-On Seminars running daily.
Special Technical Seminars for developers.

Tickets for both seminars are available at the Apple Exhibit.



PC-Aided Investing

Part 3: Portfolio Management Programs

by Jon Zonderman

Jon Zonderman, a contributing editor to the Boston Computer Society magazine *Computer Update* and a freelance writer, is currently completing a book on using your personal computer for investing.

This is the third in a three-part series on the topic for *Random Access Guide*. In this series, he is discussing programs that allow the user to evaluate possible securities investments in a number of different ways, as well as programs that assist in doing the accounting and analysis of your investment portfolio.

For further information, contact: Jon Zonderman, 311 Washington St., Somerville, MA 02143, (617) 666-1768.

Even if you do not use your computer for investment analysis—even if you do no investment analysis to speak of—the computer can be an indispensable tool for keeping records of your portfolio.

With tax time right around the corner, many active investors have already been inundated with their year-end statements from banks, brokerage houses and insurance companies telling them of their final positions for tax-year 1983. Matching these with the collection of confirmation slips that have been accumulating during

the year can be a time-consuming exercise.

The computer will not do away with all the incoming paper and the need to keep files and records for each individual account, but it can help organize the scut work of simple arithmetic and ledger-keeping. There are a number of portfolio management programs available for personal computers, ranging from simple programs that list stock holdings to sophisticated programs that give portfolio weightings for each investment in a portfolio that might include stocks, bonds, options, money market funds, certificates of deposit, Treasury bills and government-backed mortgage securities such as Ginnie Maes, Freddy Macs and Fannie Maes.

Most of the better programs available allow the user to log on to the Dow Jones News/Retrieval Service to update the prices of all the holdings he or she has automatically, without the need to key in information from the daily stock tables.

At its simplest level, a portfolio management program should mimic on the screen what you would do on paper to keep your records. The screen displays will often look different, but every portfolio management program should ask the user for the following information: the name of the security traded, its "ticker" symbol, the date the trade was made, the number of shares traded, cost-per-share

and the commission paid to make the trade. With this information in the program, whenever the user updates the price of the security, the program should automatically compute the "unrealized" gain or loss. When a security sale is made, the "realized" gain or loss will be computed.

If this was all portfolio management programs did, things would be pretty dismal. There are a number of features that the better programs have, and you should look for the program that packs the most features into the simplest format for the best price.

■ Does the program account for stock splits, dividends, fractional shares and variable commissions?

If a stock splits, you own more stock worth less per share in your cost analysis. If you buy 100 shares of a \$10 stock and it splits 2 for 1, you own 200 shares of a \$5 stock. For purposes of figuring your cost-per-share and when you have made a profit or loss after sale, you need a program that adjusts your cost-per-share basis for splits. If the program does not do this, you need to do away with the original entry and re-enter the data.

A good portfolio management program will allow you to keep track of dividends collected and should print out a yearly summary report that can be filed along with your IRS 1040 in lieu of Schedule D.

If you reinvest your dividends in shares of the dividend-paying company's stock you still have to pay taxes, except in the case of some electric utilities. In addition, when you reinvest, your dividends don't always provide enough cash to purchase a round number of shares of stock and you must buy fractional shares. Since stock prices fluctuate, you are always buying these new shares with reinvested dividends at different prices, and your cost-per-share of your entire holdings changes accordingly. It is important that your program calculate fractional shares.

In addition, it is important that the program calculate different commissions for each trade. If you get a recommendation from your broker and purchase stock in ABC company, then purchase more the next year from a discount broker, you pay a different commission. In addition, you pay no commission on shares purchased with reinvested dividends. When you sell your holdings, your commissions are figured as a part of the cost before determining your taxes, so it is important to keep accurate records of how much commission you have paid. Many simple programs assume you pay the same commission for each trade.

■ Does the program do tax lot accounting?

This is one of the most important features of good portfolio management programs, and one that many programs neglect.

If you bought blocks of the same stock at different times, when you go to sell that stock, you can designate which block you want to sell. If you do not designate, the IRS will assume that you sold the first block you

bought—so-called FIFO or first-in first-out accounting.

This can have large tax consequences. Here is an example. You buy 100 shares of XYZ company on January 10, 1983 at \$10 per share. In April, with the price hovering at \$8.50, you assume the company is ready to move upward and buy 200 more shares on April 30.

Now comes April of 1984, and you need \$1,300 to pay your income taxes. Your XYZ stock is now worth \$14 per share. Which stock should you sell?

To answer this question you must know that long-term capital gains (gains on stocks held for more than one year and one day) are taxed at a lower rate than short-term capital gains. In a long-term capital gain, 60 percent of your gain is exempt from federal income taxes and the final 40 percent is taxed at your income tax rate. The highest tax on a long-term gain, therefore, is 20 percent. Short-term capital gains are taxed at regular income tax rates.

On the other hand, a long-term loss only allows you to write 50 percent of the loss off of your taxes (you need to lose \$2 to get \$1 in tax deduction) while short-term loss allows you a \$1 for \$1 write-off.

In our example, you want to sell the 100 shares you bought 15 months ago, make \$4 per share—\$400—and pay taxes on only \$160 of the gain. If, on the other hand, the stock were selling for \$7.50 when you needed your capital infusion, you would have wanted to sell the 200 shares you bought 11½ months ago and take the \$200 loss.

It's very important that your program allow you to designate the tax lot you want to sell, especially for frequent traders, who often "tax sell" toward the end of the year and take losses in order to offset gains made earlier in the year in other tradings.

Other things to look for are programs that "flag" investments that are about to go long-term, so you have a chance to think about the tax potential of selling them while they are still short-term or don't sell short-term by mistake when it would be more advantageous to hold long-term. Other programs flag options that are about to expire—very valuable if you trade heavily in options.

Another useful feature is the ability of the program to handle multiple portfolios and cross-reference those portfolios by holdings. Many personal investors manage many portfolios, albeit small ones. There may be jointly-owned portfolios, one each for husband and wife, a custodial account for each child, a trust or two for an elderly parent, a Keogh account or personal corporation pension trust, or another account.

It's important to be able to manage these accounts within the same program, and get the program to inform you of holdings in many of the portfolios in case an investment takes a sudden turn and you want to bail out of it altogether or buy a big lot and spread it around.

**PC
Faire**

**October 25–28,
1984**

**4-day show and
Conference Program**

**Civic Auditorium
and Brooks Hall
San Francisco**

**contact:
Computer Faire, Inc.
a Prentice-Hall Company**

**East Coast Office
(617) 955-8350**

**West Coast Office
(415) 364-4294**

**PC
Faire**



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Now is a Good Time to Buy a Computer

by Jack C. Star

Is this your year to buy a computer? It should be.

If you are resisting, you are probably not convinced that a computer will do you enough good. Price can no longer be an important consideration as useful systems now sell for between \$1400-\$3000.

You may be concerned that you will buy the wrong machine, or what you will buy will be obsolete, or you plan to wait until personal/desktop computers are more standardized. If these are your reasons, you can wait forever.

Almost any system you buy will be technologically obsolete within 6-18 months. Even so, it will still do the work you want it to do for many years. If you wait 18 months, the product you buy then, even if it is state-of-the-art, will still be technologically obsolete long before it will be functionally obsolete.

There will be no universal standard. The market is far too segmented with well-positioned equipment and programs in every segment. For example, look at the operating systems available today that will continue to be available for some time to come: TRS-DOS, Apple DOS, CP/M, PC-DOS, P-system, UNIX. The number of programming languages has remained steady for several years, and each language has a steady following: BASIC, Pascal, C, Cobol, with some

Fortran, APL and FORTH thrown in. In addition, there are powerful integrated software packages that perform a number of different functions and operate in an environment all their own.

It may be difficult to deal with the concept of constant change. But deal with it you must.

Rather than talk about hardware and software, let's look at the applications you have... the real reasons you are buying your computer. It would be very surprising if your requirements have changed radically over the past few years. In fact, your office routine and your information requirements tend to remain the same, even in the face of a dazzling array of ever-changing solutions available to you at the computer store.

Try looking upon the computer as a work station that may be assigned to one individual, or shared by several. Visualize the machine in your office. Who will be using it? What tasks are they now performing manually, or on typewriters, that are best handled electronically?

What tasks are best suited for computers? It is rarely necessary to go beyond the "traditional" to justify the purchase of a small computer system.

Here is the basic list:

- Text capture and retrieval—gen-

(continued on page 21)

A Brief Look at Three Faire Speakers

Among the microcomputer industry experts scheduled to participate in the 9th West Coast Computer Faire's Conference Program are Lawrence Hughes, President of Mycroft Labs, Inc., Walter Reynolds, President of Applied i, Inc., and Peter Norton, well-known personal computer columnist.

These individuals are among 100 scheduled conference speakers. The conference sessions are designed to meet the informational needs of everyone from the new user to the most sophisticated computer scientist.

Lawrence Hughes of Mycroft Labs will speak on "Defining the Modem 7 Protocol." His presentation will encompass new technology in the growing telecommunications field. He will discuss the modem standards used in data exchange between microcomputers and data communications systems.

Hughes wrote the MITE terminal program, a state-of-the-art data communications and file transfer system (see *Random Access Guide*, Volume 1, Number 2, February, 1984). The MITE program, which runs on CP/M or CP/M86 or MSDOS, can exchange files with a large number of other microcomputers with error checking and recovery.

Hughes also worked for Honeywell and Marconi Avionics where he developed the CLINK intelligent terminal program.

Walter Reynolds, President of

Applied i, Inc., will speak on "Simulation of Real World Processes." Reynolds founded Applied i in 1983 to develop, publish, and distribute personal computer application software. His first product is TUTSIM, an interactive simulation program that was designed at Twente University of Technology Simulation in Holland. TUTSIM is an engineering tool and teaching aid that models such complex continuous systems as electronic circuits, chemical reactions, economic models, and the human heartbeat. Results are displayed graphically or numerically.

Before founding Applied i, Reynolds was an independent consultant to various Silicon Valley high-tech firms. Most recently, he helped develop the data system, hardware and firmware for a biochemical analytical instrument.

Peter Norton is the developer of a top-selling software package, *Norton Utilities*, which sets the standard for PC file recovery and disk exploration. Norton is author of five books on the microcomputer, *Inside the IBM PC*, *DOS User's Guide*, and a series of three books on the new PCjr: *Discovering the PCjr*, *Exploring the PCjr*, and *Mastering the PCjr*. He is also well known as a computer columnist and has contributed articles to many varied computer publications.

Admission to these conferences is included with the price of admission to the Faire.



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9th West Coast Computer

Thursday

Computer-Aided Instruction

Day: Thursday
Time: 2:30-4:00
Room: 308

IBM-PC-XT & Orthopaedic Surgery
Jason Calhoun, M.D.
Child Health Center, University of Texas
105 Trout Avenue
Galveston, TX 77550

Simulation as a Teaching Method Using Interactive Computer Graphics in Color
Olga Maivald, Ph.D.
ORBAX Associates
2463 Old Washington Road
Pittsburgh, PA 15241

How to Make Money with a Personal Computer

Day: Thursday
Time: 2:30-4:00
Room: 315

Carol Dysart
Computer Resources
1659 Mills Street
Chula Vista, CA 92010

William Floyd, Marketing Consultant
Computer Resources
1659 Mills Street
Chula Vista, CA 92010

Networking IBM PCs

Day: Thursday
Time: 2:30-5:00
Room: 316

Why Network?

Michael Durr, Author
10843 Eldora Avenue
Sunland, CA 91040

Network Storage and Backup Strategies

Eric Swartz
Mountain Computer

Multiuser Software on the IBM PC

Buck Gee
Software Connections

Growing Your Network

Larry Hartge
3Com Corporation

Systems & Software

Day: Thursday
Time: 2:30-5:00
Room: 401

Multi-User Micro Features Advanced Slave Architecture

Kevin C. Fischer, Vice President-Engineering
CompuPro, a Godbout Company
3506 Breakwater Court
Hayward, CA 94545

APL on Microcomputers

Bob Korsan
Decisions, Decisions!

514 Wisconsin
San Francisco, CA 94107

CP/M Plus: Keeping the 8-bit Computer Alive

Alan R. Miller
Prof. of Metallurgy
New Mexico Institute of Mining & Technology
1315 North Drive
Socorro, NM 87801

Designing a BASIC Compiler in the Lisa Workshop

Harland Harrison
Pterodactyl Software
200 Bolinas Road, Ste. 27
Fairfax, CA 94930

Educating Computer Retailers

Day: Thursday
Time: 3:00-4:00
Room: 407

Computer Retailers: What the Public Wants to Know: A Survey of the Most Commonly Asked Computer Questions

Sanford B. Weinberg, Associate Professor
College of Business & Administration
St. Joseph's University
5600 City Ave.
Philadelphia, PA 19131

Interactive Training

Day: Thursday
Time: 4:00-5:30
Room: 308

Computer Literacy—A High Tech Solution to a High Tech Problem

Walt Robson
Digital Interactive Strategies
2655 Campus Drive, Ste. 260
San Mateo, CA 94403

Carol Cramer
Computer Resources
1659 Mills Street
Chula Vista, CA 92010

Writing & Word Processing Professionally

Day: Thursday
Time: 4:00-6:00
Room: 315

How to Create a Successful Word Processing Business

Nancy Weber, Co-Owner
The Processed Word
2483 Old Middlefield Way #130
Mountain View, CA 94043

Mimi Will, Professor of Business
Foothill College
Los Altos, CA 94022

How to Publish a Microcomputer Book

Judith Ziajka, Editor-in-Chief
Osborne/McGraw Hill
2600 Tenth Street
Berkeley, CA 94710

Writing the Great American Computer Book

Jerry Willis, Author
Box 2010
Lubbock, TX 79408

Human Engineering

Day: Thursday
Time: 4:00-5:00
Room: 407

Three Ways to Communicate

Chris Crawford
Atari
P.O. Box 427
Sunnyvale, CA 94086

Software Review

Day: Thursday
Time: 4:00-5:00
Room: 415

Whole Earth Software Review

Richard Dalton

Hardware Engineering

Day: Thursday
Time: 5:00-6:00
Room: 407

Electromagnetic Interference: Treating the Disease Instead of the Symptoms

Cindy Lee
Project Planning Engineering
Monolithic Memories Inc. MS08-26
2175 Mission College Blvd.
Santa Clara, CA 95050

Friday

For Novices

Day: Friday
Time: 11:00-1:00
Room: 308

Learning the Art of Computer Programming

Do-While Jones
324 Traci Lane
Ridgecrest, CA 93555

A Printer Is a Printer, Isn't It?

Martin L. Dean, President
Select Information Systems
919 Sir Francis Drake Blvd.
Kentfield, CA

Who Needs to Program?

Doug Mosher, Division Manager
Sybex Computer Books
2344 Sixth St.
Berkeley, CA 94710

Legal Issues for Software Developers

Day: Friday
Time: 11:00-1:00
Room: 315

Licensing Rights to Software: Consideration in Dealing with Japanese Parties

Stephan Coonrod, Attorney
Preston, Thorgrimson, Ellis & Holman
2000 IBM Building
Seattle, WA 98111

Legal and Ethical Issues in Marketing Software

Eli Cohen, Ph.D.
California State University
6401 South Land Park
Sacramento, CA 95831

Simulation & Forecasting

Day: Friday
Time: 11:00-1:30
Room: 316

Forecasting Techniques With Personal Computers

Arthur B. Steiker, Senior Associate
Browne, Bortz & Coddington
155 South Madison St.
Denver, CO 80209

Simulation of Real World Processes

Walter E. Reynolds
Applied i
200 California, Ste. 214
Palo Alto, CA 94306

Computer Simulation of Psychological Processes

Gene D. Steinhauer, Ph.D.
Psychology Department
California State University
Fresno, CA 93740

For Managers Only

Day: Friday
Time: 11:00-2:00
Room: 401

Computer Training That Pays for Itself

Stephanie Rosenbaum, President
Tec-Ed
P.O. Box 1905
Ann Arbor, MI 48106

Mary Gardner, Marketing Program Manager

Convergent Technologies
2441 Mission College Blvd.
Santa Clara, CA 95050

A Manager's Guideline for Implementing Integrated Computer Systems in the Laboratory

Wayne Powell, President
Target Information Systems
8735-96 Ave. Suite B, Edmonton
Alberta, Canada, T6C-2B1

Faire Conference Program

The Project Management Process in a Data Processing Environment

Joan Knutson, President
AHRD Associates, Inc.
2271 Union Street, Ste. 1
San Francisco, CA 94123

Educating the Corporation About Personal Computers

Scott James Johnson
Ford Aeronutronic Division
2544 Orange Suite E
Costa Mesa, CA 92627

Modula-2
Day: Friday
Time: 11:00-2:30
Room: 407

Modula-2: A Worthy Successor to Pascal

Joel McCormack
Volition Systems
P.O. Box 1236
Del Mar, CA 92014

Unusual Applications
Day: Friday
Time: 1:00-3:00
Room: 308

Machine Language Programming of Computer Music

Dr. Dave Marquis
University of Maine
119 Fleetwood Street
Presque Isle, Me 04769

Scientific Data Acquisition on a Shoestring Budget
Day: Friday
Time: 1:30-3:30
Room: 315

Major Problems in Home Educational Software

Robert M. Caldwell, President
PANDA Learning Systems
4255 LBJ Frwy, Suite 131
Dallas, TX 75234

A New Standard for Educational Software

John Victor, President
Program Design, Inc.
24 Sawmill Lane
Greenwich, CT 06830

Expert Systems & Artificial Intelligence

Day: Friday
Time: 2:00-3:30
Room: 316

Expert Systems Get Personal: Modeling Expertise with the IBM PC

Jeffrey Perrone
Jeffrey Perrone & Associates
3685 17th Street #7
San Francisco, CA 94114

An Introduction to Cognitive Networking

Jim Neary, President
San Francisco Society for General Systems Research
62 Wilmington Drive
Petaluma, CA 94952

Telecommunications I

Day: Friday
Time: 2:30-4:30
Room: 401

Public Data Bases

Larry Magid
Syndicated Computer Columnist, Los Angeles Times
Executive Vice President, Know How, Inc.
Four Embarcadero Center, Ste. 1970
San Francisco, CA 94111

Seven Gremlins of Telecommunications

Andrew Fleugleman, Editor-in-Chief
PC World
555 De Haro
San Francisco, CA 94107

Micro to Mainframe Connections

Mark Cummings
Micro & Terminal Technologies
Bank of America
22-4th St., 9th Floor
San Francisco, CA 94103

Panel: Modula-2
Day: Friday
Time: 3:00-6:00
Room: 407

Anton Gorrengourt
Logitech
165 University Avenue
Palo Alto, CA 94301

John Craig
Diser Corporation
155 S. 1200 West #24
Orem, UT 84058

Richard Ohran
Modular Research
Joel McCormack
Volition Systems
Box 1236
Del Mar, CA 92014

Teletypesetting
Day: Friday
Time: 3:30-5:30
Room: 308

Tony Bove
Dave Cortesi

Information Utilities

Day: Friday
Time: 3:30-6:00
Room: 315

Knowledge Index: or What It Took to Have a DIALOG with the Personal Computer

James Maloney
Dialog Information Services, Inc.
3460 Hillview Avenue
Palo Alto, CA 94304

Portable Computing

Day: Friday
Time: 4:00-6:00
Room: 316

How to Choose a Portable Computer

David A. Wilson
Personal Concepts
635 Wellsbury Way
Palo Alto, CA 94306

Will Notebook Computers Revolutionize Computer Usage?

David H. Ahl, Editor-in-Chief
Creative Computing
39 E. Hanover Avenue
Morris Plains, NJ 07950

Micros to Mainframes

Day: Friday
Time: 4:00-6:00
Room: 415

Moving PCs into the Mainstream of Business Data Communications

John Purner
AST Research
2121 Alton Avenue
Irvine, CA 92714

The Personal Computer Connection: Interfacing Microcomputers to Host Computers

Jeri Lynn Edwards, Sr. Syst. Analyst
Tandem Computers
1309 So. Mary Avenue
Sunnyvale, CA 94087

Remote Collection of Data Using the IBM PC to Decrease Time From Purchasing Gas to Billing the Customer

S. Denny Smith, Director of Information Services
TOSCO Corp.
P.O. Box 2860
Bakersfield, CA 93303

Saturday

Bringing Software to Market

Day: Saturday
Time: 11:00-2:00
Room: 308

Freeing the Elephant—an Essay on Software Design

Ken Takara
1306 Sippola Way
San Jose, CA 95121

Interactive Software for Product Evaluation:

A Hierarchical Modelling Approach
Paul J. Hofman, Ph.D.

Cogitan
151 University Avenue
Palo Alto, CA 94301

Practical Tools for Software Test Certification

David Casey
Software Research Associates
P.O. Box 2432
San Francisco, CA 94126

Emerging Software Distribution Channels
Ira L. Weise, President
800 Software
940 Dwight Way #14
Berkeley, CA 94710

Managing Software Products and Projects:

A Combined Technical and Marketing Approach
Edward D. Isenberg, Manager,
Marketing Applications, Programming and Support
MDS Gantel, Inc.
36835 Oak Street
Fremont, CA 94536

FORTH

Day: Saturday
Time: 11:00-1:30
Room: 315

Forth-83: The New Standard

Robert L. Smith
ESL Inc.
2300 St. Francis Drive
Palo Alto, CA 94303

Why Forth

Martin J. Tracy
MicroMotion
12077 Wilshire Blvd.
Los Angeles, CA 90025

FORTH Native Code Compiler

Ray Duncan
4147 Beethoven Street
Los Angeles, CA 90066

Solving Problems with Forth

Michael A. Perry
1125 Bancroft Way
Berkeley, CA 94702

USUS Tutorials

Day: Saturday
Time: 11:00-6:00
Room: 316

An Introduction to the p-System

Robert W. Peterson
MTS, Texas Instruments
P.O. Box 225474 MS 439
Dallas, TX 75265

(USUS Tutorials continued on page 24)

UNIX* Systems Expo/84 to Focus on New User Markets

UNIX Systems Expo/84 will be held September 13-14 at the Los Angeles Convention Center in response to the recent acceptance of the UNIX operating system into the business and governmental communities. In contrast to previously announced technology oriented trade shows, Computer Fair, Inc. (CFI) has organized UNIX Systems Expo/84 specifically as a vehicle for connecting UNIX vendors, resellers and end users. Direct, honest vendor-to-user knowledge, AT&T's UNIX operating system as the new industry standard, over 100 vendors of UNIX-related products, and services are expected to exhibit at the event.

A Professional Conference Program featuring industry and end user presentations and panel discussions will explore issues ranging from the standardization in implementation of cost-effective dealer and customer support programs. The prime objective of the Conference Program is to insure that attendees come away with an understanding of how the UNIX system can be used to maximum advantage.

New Focus

While academic and user orga-

nizations have held UNIX-oriented shows in the past, this is the first time computer, MC, and EDP managers, small business users and professional end users, resellers and software developers will be invited to the same event. "End users, including the many Fortune 1000 companies switching to UNIX have traditionally been ignored at UNIX shows," according to David Sudon, president of CFI. "We promise end users to be vital to the UNIX marketplace, and therefore we are inviting them to find out what UNIX is all about. UNIX Systems Expo/84 is the one place where vendors, users and resellers can meet to discuss their common goals," he said. "Furthermore," Sudon added, "UNIX Systems Expo/84 offers an unparalleled opportunity for resellers to establish important contacts with all of the major as well as the newer companies offering UNIX-based hardware and software products."

Why UNIX is Important

The UNIX operating system, written at AT&T Bell Laboratories, has recently been adopted by virtually all major computer manufacturers. IBM, Digital Equipment and Prime are the latest to support UNIX operating sys-

tems for their machines. AT&T itself is expected to bring a powerful UNIX-based microcomputer to market in a few months, according to David Fried, whose firm InfoPro Systems (East Hanover, NJ) publishes *Unixique*, a newsletter covering UNIX for the computer industry.

Most industry analysts agree that UNIX—an operating system that is "portable" to many different computer hardware environments—represents a major break from the proprietary systems of the past, and that it is destined to become the next industry standard. Dr. Brian Boyle, Director of Software Research at Quotac Concepts (San Mateo, CA), a leading market research firm, estimates that UNIX system growth will surpass that of any other professional operating system over the next four years, and that total expenditures on UNIX-related products will exceed \$5 billion by the end of 1985.

New Direction for CFI

In launching UNIX Systems Expo/84, CFI is moving in the direction of producing more focused events for the industry and the needs of computer products and services. Plans are being developed for UNIX systems

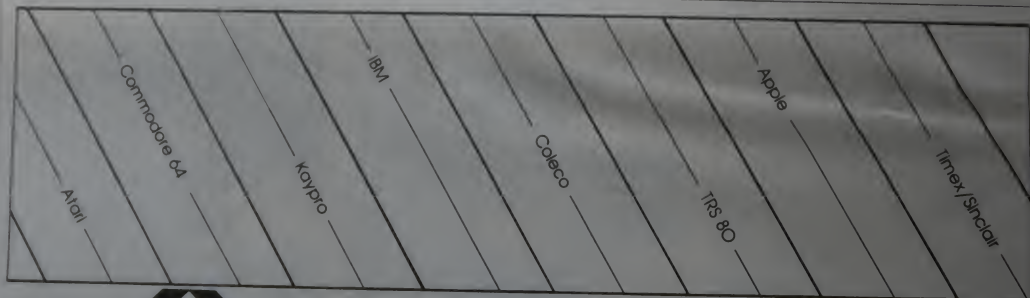
conferences and expositions in 1985 and 1986. Given the projected growth of UNIX as the operating system of the future, CFI will produce a minimum of two shows devoted to UNIX in both 1985 and 1986. CFI, a major producer of computer shows including "The PC Fair", "The West Coast Computer Fair" and "The East Coast Computer Fair" is a subsidiary of Pentice-Hall, the software and computer book publisher.

For more information, a registration form, an exhibitor's kit, please contact: Computer Fair, Inc., 181 Wells Ave., Needham, MA 02154 (617) 963-4150.

*UNIX is a trademark of AT&T Bell Laboratories.

Apple House Address

The computerized home that John Blankenship created with his Apple Computer was described in the last issue of the RAC, but the author's address was inadvertently omitted. To order the diskette described in the article, "Life Can be Automatic in an Apple Home," please send a \$12.50 to John Blankenship, 5100-B, Box 1000, Doraville, GA 30362.



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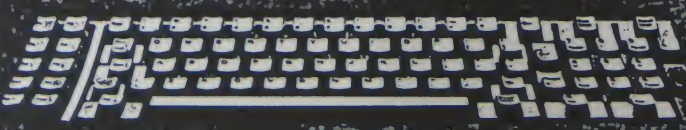
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Save Time—Buy Your Faire Tickets Early

Tickets for the 9th West Coast Computer Faire are available from the following retailers:

Access to Software, 4720 Geary Blvd., San Francisco, (415) 751-2251

Affordable Computers, 716-A Light-house Ave., Pacific Grove, (415) 373-7177

Affordable Computers, 8035 Soquel Dr., #25, Aptos Station Shopping Ctr., Aptos, (408) 662-3688

Basically Speaking Microcomputers, 3728 Sonoma Blvd., Vallejo, (707) 557-5586

Comet Electronics, 1550 Tiburon Blvd., Tiburon, (415) 435-4878

Computer Literacy, 520 Lawrence Expy #310, Sunnyvale, (415) 730-9958

Computer Store, 1320 Webster St., Oakland, (415) 763-7900

Computer Store, 2015 NW Circle Blvd., Corvallis, OR (513) 754-0811

Computerland of San Francisco, 117 Fremont, San Francisco, (415) 546-1572

Computerland of San Francisco, 2807 Geary Blvd., San Francisco, (415) 921-7773

Computerland of San Francisco, 2272 Market St., San Francisco, (415) 864-8080

Computerland of San Francisco, 1303 Van Ness Ave., San Francisco, (415) 673-6640

ComputerWare, 1032 11th St. Modesto, (209) 578-9739

Crown Computer Works Limited, 4200 Balboa St., San Francisco, (415) 668-8980

Data Domain of Schamburg, 1612 E. Algonquin Rd., Schamburg, IL, (312) 397-8700

Fannings Book Store, 1348 Ninth Ave., San Francisco, (415) 564-7094

First Osborne Group, 6331 Mission Blvd., Daly City, (415) 755-4140

Heathkit Electronic Center, 6000 Potrero Ave., El Cerrito, (415) 236-8870

Heathkit Electronic Center, 2001 Middlefield Rd., Redwood City, (415) 365-8155

Home & Business Computer Center, 1807H Santa Rita Rd., Pleasanton, (415) 846-3944

JDR MicroDevices, 1224 S. Bascom Ave., San Jose, CA 95128, (415) 995-5430

Kepler's Books & Magazines, 821 El Camino Real, Menlo Park, (415) 324-4321

Magic Rainbow, 305 Palmcrest #35, Daly City, (415) 469-2357

Micro Exchange, 1727 State St., Santa Barbara, (805) 963-9441

MicroPacific Computer Center, 5148 N. Palm, Fresno, (209) 229-0101

Opamp Tech Books, 1033 N. Sycamore Ave., Los Angeles, (213) 464-4322

Photo Motion Inc., 1835 Haight St., San Francisco, (415) 668-4687

Software Centre, 477 University Ave., Palo Alto, (415) 327-0520

Spin-Tronics, 2490 Channing Way #409, Berkeley, (415) 843-2745

3E Software & Systems, 22408 Mission Blvd., Hayward, (415) 537-3637

Vintage Computer Development Co., 706 Trancas St., Napa, (707) 257-3901

UNIX*: What's It All About?

by David Fiedler

This article originally appeared, in a different form, in *Computers and Electronics*, September, 1983. David Fiedler is the editor of the UNIX industry newsletter *UNIXIQUE*. He has written articles about the UNIX operating system for a wide variety of computer journals, and is the president of The Perchwell Corporation, a market research and consulting firm for UNIX users.

© David Fiedler, InfoPro Systems, PO Box 849, Denville, NJ 07834.

What is UNIX?

The UNIX operating system originated at Bell Laboratories in 1969. Since its release to the general public in the early 1970's, it has gone through several major revisions, been transported to both microcomputers and large IBM mainframes, and has become a major force in the computer industry—and yet relatively few people seem to know much about it. This article will hopefully serve to enlighten you about some of the "mysteries" of the UNIX system, and help you understand just why so many companies are announcing products compatible with UNIX.

UNIX was developed not as a general-purpose commercial operating system, nor even as a product. A Bell Laboratories scientist named Ken Thompson found a DEC PDP-7 (a small but fairly powerful minicomputer) in a lab that was not being heavily used, and decided that it would be an ideal machine to implement a new type of file system that he had been thinking about. He put some novel ideas into this system that were designed to provide what has been called by Dennis Ritchie "a pleasant environment in which to write and use

programs". While any operating system is designed to allow people to use a computer more efficiently, UNIX has proved especially "friendly" in this regard.

Ritchie found UNIX so fascinating that he began spending a great deal of his time helping Thompson refine it. Others found UNIX easy to use as well, and eventually Thompson and Ritchie got larger machines to work with. While UNIX was originally written in low-level assembly language, Thompson and Ritchie became dissatisfied with this approach, especially as they were considering putting UNIX on other computers with completely different instruction sets. So the C language was created as an "intermediate-level" language—one that was both highly efficient (fast execution of programs as well as low memory usage) and easily portable to other computers. With UNIX largely rewritten in C, the operating system itself became portable: for the first time, widely different computers could run the same programs without the extensive rewriting that was previously necessary.

What's So Good About It?

While transportability is important in itself, there are more unique ideas expressed in UNIX that have made it so popular:

■ **Tree-like file system:** operating systems usually impose a predefined structure of some type on the way files are viewed by its users. In most cases, this structure is a simple "disk directory" which lets you access certain files when you use the system. On UNIX, the structure can be viewed as an upside-down "tree" with its single "root" at the top. The root is the main directory in UNIX; it leads down to all other files and directories. You can add to your own directory (usually

located in the /usr directory) by creating new files or even new sub-directories. This allows you to create whatever structure you need to manage your data effectively, much like being able to add new filing cabinets with ever more drawers and more file folders at any time.

This is sometimes called a "hierarchical" file system, because it resembles an organization chart, where the "big boss" (in this case, the root) is at the top. And like some organizations where one individual may have two responsible positions, a UNIX file can be accessed by several different names through different paths.

■ **I/O simplicity:** the input and output devices attached to a computer are what allow humans to communicate with it. UNIX permits any device—be it a CRT terminal, printer, or even main memory—to be accessed by simply reading or writing a character at a time. This is aided by the UNIX view that all files are just a sequence of bytes to be read or written—no external structure is expected by the operating system. Even when a device actually requires data in large blocks (such as a disk drive), UNIX hides this dependency from you by taking care of these details internally.

In fact, all devices on a UNIX system appear to the user to be ordinary files (they may be found as entries in the /dev directory). So a program intended for use with a disk file could easily be changed to work with a printer instead—but redirection makes even this rewriting unnecessary.

■ **Redirection and piping:** Any program that normally "prints" to your terminal can have its output redirected to a disk file, printer, or another device. Similarly, a program's input can be easily directed to come from a file, modem, or any device that can read characters. This allows the same

program to serve many purposes. A text editing program can get its input from a predefined set of instructions, for instance, eliminating errors in repeated complex editing sessions.

The concept of a program that simply operates on its input and transforms it into some output is important. On UNIX, these type of programs are termed filters. Many programs on UNIX are filters, and perform one function only. The output of one can be connected to the input of another in a kind of pipe arrangement. By piping them together, it's easy to use them as "building blocks" to perform much more complicated functions—without having to write more programs.

One example of piping that is often used when running UNIX involves backups. The disk used to store files on most UNIX systems are very large in capacity, so it takes a long time to save all the files onto tapes or floppy disk. To save time, a UNIX system administrator will save daily only those files that were actually changed on that particular day, or certain files known to be important. The following command line will save to tape all C source files on an entire system:

```
find -name "*.c" -print tar c
```

The "find" command goes through the tree structure, looking for all files which fit the criteria—in this case, all files ending in ".c", and emits a list of filenames. This list is then handed off to the "tar", or tape archiver program, which can then go ahead and write each file to a new backup tape (the "c" after tar means to create a new tape).

The best part of pipes is not just that they are a convenient way of sending information from one command to the next, but that the com-

(continued on page 28)

THE 9TH WEST COAST COMPUTER FAIRE

Exhibitor List

- 3M Data Recording Products
Division
800-Software Inc.
A.P.P.L.E.
ARTSCI Inc.
AST Research Inc.
Abacus Associates
Abacus Software
Access Software Inc.
Access Matrix
Addison Wesley Publishing Co.
Addmaster Corp.
Advanced Computer Controls
Advanced Computer Products
Advanced Micro Technology
Advanced PC Software Inc.
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Algoram Computer Products Inc.
Allen Gelder Software
Allenbach Industries Inc.
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Amdek Corp.
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Ampro Computers Inc.
Anaheim Publishing Co.
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Anchor Pad of Northern California
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Anvil Cases Inc.
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Applied i
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Autodesk Inc.
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Byte Shops
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Carousel MicroTools Inc.
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Central Point Software
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CompuPro
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Computer Biz Inc.
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Computer Discount of America
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Computer Gaming World
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Computer Services
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Contractors Software
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Data Dynamics Technology
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Datamost Inc.
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Diamond Computer Systems Inc.
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Digital Equipment Corp.
dillithium press
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Diskus Products
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Doss Industries
Douglas Electronics
Douthett Software
Dysan Corporation
Eagle Computer Inc.
East Side Software
Edu-Ware Services Inc.
Elcom Systems Computers Inc.
Electro Mavin
Elsevier: The Software Catalog
Emulex Corp.
Ensign Software
Everex Systems
Exersoft Corp.
FMJ Inc.
Floppy Disk Services Inc.
Forth Interest Group
Forth Technology
Freedom Won/Bay Area Home
Computers
Galloway Enterprises Inc.
Great Salt Lake Computer Co.
H & E Computronics Inc.
H & R Enterprises
Harper & Row, Electronic and
Technical Pub.
Handwell Corporation
Hayden Book Co.
Heath Co/Zenith Data Systems
Home Computer Magazine
Hot Line Inc.
Houston Instruments
Howard W Sams & Co. Inc.
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Image Resource Corp.
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JMM Enterprises
JNZ Inc.
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Jade Computer Products
Jandel Corp.
Japan Micro Computer Club
Jay Gee Programming Co.
John Bell Engineering Inc.
John Wiley & Sons
KRES Engineering
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Magnolia Microsystems
Marina Computer Systems
Maxell Corp of America
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Media Systems Tech.
Mennotech Corporation
Mendocino Software Co. Inc.
Managment Information Source Inc.
Micro Data Tek
Micro Discovery Magazine
Micro Flash Computer Systems
Micro Gold
Micro Lab
Micro Peripherals Inc. (MPI)
Micro Sphere
MicroPro Intl. Corp.
Microbits Peripheral Products
Microcomputer Accessories Inc.
Microsci Corporation
Microsoft Press
Microware Exceltek
Microwest Distrib Inc.
Mindware
Minnesota Western
Mission Computer Corp.
Mitsuba Corp.
Monarchy Engineering Inc.
Moore Business Center
Morrow
Mossland Technology
Mountain View Press Inc.
Mouse Systems Corp.
Mouser Electronics
Nexa Corp.
North American Technology Inc.
Northwest Digital Systems
Nuts & Volts Magazine
Oasis Systems
Optimized Systems Software Inc.
Orange Micro
Osborne Computer
Osborne McGraw Hill
Overbyte
Personal Computer Age
PC Supply
PC World Comm Inc.
PL Hagelstein & Assoc.
PBI Software
Pacific Data Systems
Panamax Line Conditioning
Parsec Research
Passport Designs Inc.
Patrick & Co.
Patton & Patton
Penguin Software Inc.
Personal Micro Computer
Portable Computer Magazine
Practical Peripherals Inc.
Prentice-Hall
Priority One Electronics
Program Design Inc.
Proper Software
Periodactyl Software
Quadram Corp.
Quiet Designs Inc.
RR Software
RH Electronics Inc.
RCA Micro Computer Products
Radio Shack
Rana Systems
Reston Publishing Co. Inc.
Rocky Mountain Software Systems
Rolltops Unlimited
Rothenberg Info Systems Inc.
SF Apple Core Inc.
SBT Corp.
Sam Clar Office Furniture
Select Info Systems Inc.
Sextant Magazine
Sierra On-Line Inc.
Sigma Designs
Silicon Valley Systems
SirTech Software Inc.
Sirius
Skyland Systems Inc.
Southern California Research Group
Softsel Computer Products Inc.
Softalk Publishing
Software Magazine
Software Options
Software Productions
Software Strategies Inc.
Software Toolworks, The
Solid Corporation
Staceys Books
Stanford Bookstore
Stellation Two
Strategic Simulations Inc.
Strawberry Tree Computers
Structured Design Inc.
Sunol Systems
Sybex Computer Books
Synapse Software
Syntauri
Szyggy Computer Systems
TAB Books Inc.
TG Products
TNW Corp.
TOTL Software Inc.
Tall Tree Systems
Technical Micro Systems Inc.
Techware
Tecmar Inc.
Ten Speed Press
Texas Instruments Inc.
Time Arts Inc.
Transend Corp.
Trionyx Electronics Inc.
Tronix Publishing
USI Computer Products
User Guides Inc.
User's Guide Magazine
Vector Electronic Co.
Venture Micro Inc.
Videx Inc.
Vidiom Media Supply Inc.
Wadsworth Electronic Pub Co.
Walker Graphics
Wayne Green Inc.
Wesper Micro Systems
West Coast Business Products
Western Computer Supply
Whole Earth Software Catalog
Wico Corp.
Wild Video
Wood & Clay Hi-Tech Gameware
Workman & Assoc
Worldwide Software Pub
Xcomp
Xebec

9th West Coast Computer Faire Seminar Series

Since most people cannot afford either the time or money for the training required to efficiently utilize today's complex software, Computer Faire, Inc. has contracted with two of the industry's leading training firms to provide Faire attendees with a complete Seminar Series on-site, at minimum expense. This Series is designed to complement the Conference Program.

International Technical Seminars

In 1980 International Technical Seminars became the first company to dedicate itself to quality UNIX instruction. Today it remains a leader in UNIX support with a trio of services designed to help users avoid pitfalls. Seminars have remained a major focus of ITS, but consulting and specially-tailored documentation are now also available to clients looking to make UNIX the powerful tool it was designed to be.

ITS's clients range from start-up enterprises to Fortune 500 corporations. Among its prominent clients are American Telephone and Telegraph, Control Data Corporation, Hewlett-Packard, Intel Corporation, Lockheed Missiles and Space Corporation, Onyx Systems, Siemens AG, Tektronix, Texas Instruments, UniSoft Corporation, and the University of California.

ITS courses and technical materials have consistently earned high industry marks for clarity and reliability.

(See Instructor Information on page 18.)

Introduction to the IBM PC and DOS (K-H)

This seminar provides an overview of the IBM PC—its hardware and available software. Special emphasis is placed on the PC-DOS operating system with special tips to increase productivity. Topics include: what comes with a PC—hardware (equipment), manuals, reference cards, Disk Operating System, and Basic manual; what an IBM PC can and cannot do; the IBM PC keyboard, display, system unit and accessories; floppy and hard disks and drives; computer etiquette: do's and don'ts; types of software; PC Disk Operating System (DOS) commands. (Half-day)

Introduction to dBase II (K-H)

This powerful data base management system can be used by businesses of all sizes to create and maintain simple or highly complex information systems. This seminar covers the fundamentals of data base management and how to plan and create a computerized data base management system. Topics covered include: an overview of data base management issues; introduction to key data base terms; planning a data base; creating a data base structure; modifying and editing a data base; entering and viewing your data; finding and extracting key information; sorting; editing and correcting errors; and merging data from other files and even other programs such as Lotus 1-2-3. (Half-day)

Introduction to Lotus 1-2-3 (K-H)

1-2-3 is a popular and powerful integrated program that combines spreadsheet, business graphics and data base management. This introductory seminar covers the full range

Know-How

Know-How, the creators of the Retained Learning Method, is an independent microcomputer education company. Using proven educational methods and state-of-the-art technology, Know-How has created an environment that demystifies computers while dramatically enhancing the learning process. The courses offered at Know-How's San Francisco Learning Center feature hands-on experience and Course Notes—which reflect classroom learning, provide students with reference resources, and stimulate retention. All Know-How seminars will be taught by Know-How instructors under the direction of Lawrence J. Magid, Executive Vice-President. Mr. Magid is a nationally syndicated computer columnist for the Los Angeles Times, a contributing editor of PC World, and former editor of PC magazine. He is the author of several books and numerous articles on microcomputing.

of spreadsheet options plus an introduction to database and graphics. Other topics include: what Lotus can do for you and your business, with special emphasis on practical applications; how typical business applications can be streamlined through the use of 1-2-3; building a worksheet; creating simple graphs—types of graphs titles, legends, labels and displaying graphs; and using Lotus reference tools. (Half-day)

Intermediate Lotus 1-2-3 (K-H)

This course is for those who are familiar with the basics of Lotus 1-2-3. Basic worksheet, range, copy, move, and file commands are covered in our Introduction to Lotus 1-2-3 Seminar and not repeated in this class. Instead, the focus is on graphics and database functions. Topics will include: advanced worksheet features and special functions; Lotus Macros—making the most of a single keystroke; graphics—including creating bar, line, pie, stacked-bar and xy graphs; database management, including—setting up a data base worksheet specifying selection criteria; and sorting, finding, and extracting data using data base statistical functions. (Half-day)

Beyond the Basics of BASIC (ITS) (International Technical Seminars)

Instructor: Stan Kelly-Bottle
This is a contravert look at BASIC that will be of interest to those who already know the language and want to hone their understanding. The seminar will provide pointers to the literature and to the vendors of BASIC compilers and interpreters, and indicate a structure for evaluating imple-

mentations of BASIC. There will also be practical guidelines for writing efficient and robust code. Emphasis will be on the issues of portability and standardization. (Full day)

C By Example (ITS)

Instructor: Bill Tuthill, Imagen, Inc., Mountain View, CA.

Each aspect of C will be illustrated by a complete, working example. Building from simple to more complex examples, the presentation will emphasize programming style and standard C as realized under UNIX. Other implementations of C will be mentioned if there is time. (Full-day)

Giving Up Programming (ITS)

Instructor: Sharon Boucher, International Technical Seminars, Inc., San Francisco.

Using the tools that are standard on every UNIX system, you may well be able to give up "programming," in the old sense, for "shell script writing." The advantage of saving time in getting something working allows further refinement without tears. The class will introduce the shell as a programming language, and awk as a major force in implementing shell programs. (Half-day)

The UNIX System (ITS)

Instructor: Steve Bourne, Silicon Graphics.

This introduction to UNIX for programmers focuses on the functionality of the system achieved by combining the shell with selected program tools. The course is NOT FOR COMPUTER NOVICES, but for programmers new to UNIX and C. The language C will be touched on but mostly as a part of a programmer's environment on UNIX. (Full-day)

Administating Your Micro UNIX System (ITS)

Instructor: To be announced.

How is UNIX on a micro different? Topics will include startup and shutdown procedures, adding users, placing files for efficiency, files that grow, speeding up your UNIX system, backup and recovery procedures, using cu to call another system, adding devices, and reading the UNIX Programmer's Manual. (Full-day)

Database Management on Your IBM PC (ITS)

Instructors: Sandy Emerson and Marcy Darnovsky

Topics discussed include: 1) how to tell a real database management system from a file handler; 2) how to match your information management needs to the packages available; and 3) how to evaluate information management software.

They will give evaluations, based on hands-on experience, of several popular IBM PC information management packages, including dBase II, Lotus 1-2-3, InfoStar, R:Base 4000, Conдор 3, Sequitur, and Informix. The evaluations will be illustrated by showing these systems' responses to a test application. (Half-day)

UNIX for the IBM PC (ITS)

Instructor: To be announced.

Putting UNIX on your PC: what it takes, how much it costs, where to get it. Using UNIX on the PC: limitations of implementation, the file system, the commands, programming languages, and system administration.

WordStar the Easy Way (ITS)

Instructor: Ann Hernandez, AB Computers, Walnut Creek, CA.

WordStar is the industry standard for microcomputers running CP/M and MS-DOS. Its portability and ease of use make it an ideal package for writers. By making WordStar commands easy to remember this seminar makes the package easy to use. The approach unifies concepts in WordStar rather than teaching isolated commands. (Half-day)

Word Processing Using UNIX (ITS)

Instructor: To be announced.

The development of word processing power under UNIX "legitimized" it within Bell Labs. By inserting easy-to-learn formatting codes in a text file it is possible to create letters, reports, memos, or other writing that can even contain tables. Attention will be focused on the "rms" (manuscript) macros developed at Bell Laboratories and the de facto standard on most UNIX systems.

Shopping for Your UNIX System (ITS)

Instructor: To be named.

UNIX the right solution to your problem? Choosing the right hardware for the right job. Making sure you really get UNIX. Which version of UNIX is the right one? The question of support. Sources for software, services, information. (Full-day)

Evaluating Spreadsheet Programs (K-H)

There are several powerful spreadsheet programs on the market, but no one program is ideal for every user. This seminar will guide participants in evaluating and selecting a spreadsheet program. Topics included are: Lotus 1-2-3, SuperCalc (versions 1, 2 and 3); VisiCalc; Multiplan and MBA.

The instructor will demonstrate each program, provide objective criteria for comparison and share some little known tricks and time savers. (2½ hours)

Evaluating Word Processing Programs (K-H)

A word processing system allows you to type, edit, re-arrange, erase, insert, and generally "massage" text before it is committed to paper. This seminar goes over the features to look for in selecting word processing programs.

The seminar will be generic in nature. Specific discussion will focus on WordStar, Microsoft Word, MultiMate, EasyWriter II, EasyWriter 1.1 (from IBM)

Participants will receive a free copy of *The Know How Guide to Buying a Word Processing System* by Lawrence J. Magid. (2½ hours)

Avoiding Software Rip-Offs (ITS)

Instructor: Glenn Groenewold
Legal considerations for software protection, emphasizing preventive measures and ways to avoid lawsuits. Surveys the law pertaining to copyrights, patents, and trade secrets. Describes methods of avoiding common pitfalls in establishing and maintaining copyrights, trade secrets and proprietary information. Describes means of insuring that employees, licensees and third parties preserve trade secrets. (Half-day)

The 9th West Coast Computer Faire Seminar Series

In-depth Seminars At Faire Prices

Presented by expert instructors from two of the industry's top computer training firms, International Technical Seminars, Inc. and Know How, Inc.

	Cost
Introduction to the IBM PC and DOS	\$ 65.00
Introduction to dBasell	65.00
Introduction to Lotus 1-2-3	65.00
Intermediate Lotus 1-2-3	65.00
Beyond the Basics of BASIC	95.00
C by Example	95.00
Giving Up Programming	50.00
The UNIX System	125.00
Administering Your Micro UNIX System	95.00

	Cost
Database Management on Your IBM PC	\$ 50.00
UNIX for the IBM PC	50.00
WordStar the Easy Way	50.00
Shopping for Your UNIX	50.00
Word Processing Using UNIX	50.00
Evaluating Spreadsheet Programs	40.00
Evaluating Word Processing Programs	40.00
Avoiding Software Rip-offs	50.00

All seminars will meet in San Francisco's Civic Auditorium in the Civic Center. The seminar registration fees do not include the West Coast Computer Faire registration/admission, which is additional. If you register for more than one seminar, you only pay the Faire admission once. Pre-registration is highly recommended as enrollment is limited.

	9:30am	12:00 noon	1:00pm	1:30pm	4:00pm	4:30pm	5:00pm
Thursday							
							Introduction to the IBM PC and DOS
							Introduction to Lotus 1-2-3
							Introduction to dBasell
Friday							
							C by Example
							Administering Your Micro UNIX System
							Introduction to the IBM PC and DOS
							Database Management on Your IBM PC
							Introduction to Lotus 1-2-3
							UNIX for the IBM PC
							Shopping for Your UNIX
							Intermediate Lotus 1-2-3
							Introduction to dBasell
							Evaluating Spreadsheet Programs
							Evaluating Word Processing Programs
Saturday							
							Beyond the Basics of BASIC
							C by Example
							Introduction to Lotus 1-2-3
							Database Management on Your IBM PC
							Introduction to dBasell
							WordStar the Easy Way
							Shopping for Your UNIX
							Avoiding Software Ripoffs
							Introduction to the IBM PC and DOS
							Intermediate Lotus 1-2-3
							Evaluating Word Processing Programs
Sunday							
							The UNIX System
							Giving Up Programming
							Introduction to the IBM PC and DOS
							UNIX for the IBM PC
							Introduction to Lotus 1-2-3
							Word Processing Using UNIX
							Intermediate Lotus 1-2-3
							WordStar the Easy Way

Circle number of seminar(s) you choose.

- 1 Introduction to the IBM PC and DOS, Thursday
- 2 Introduction to the IBM PC and DOS, Friday
- 3 Introduction to the IBM PC and DOS, Saturday
- 4 Introduction to the IBM PC and DOS, Sunday
- 5 Introduction to dBasell, Thursday
- 6 Introduction to dBasell, Friday
- 7 Introduction to dBasell, Saturday
- 8 Introduction to Lotus 1-2-3, Thursday
- 9 Introduction to Lotus 1-2-3, Friday
- 10 Introduction to Lotus 1-2-3, Saturday
- 11 Introduction to Lotus 1-2-3, Sunday
- 12 Intermediate Lotus 1-2-3, Friday
- 13 Intermediate Lotus 1-2-3, Saturday
- 14 Intermediate Lotus 1-2-3, Sunday
- 15 Beyond the Basics of BASIC, Saturday
- 16 C by Example, Friday
- 17 C by Example, Saturday
- 18 Giving Up Programming, Saturday
- 19 Giving Up Programming, Sunday
- 20 The UNIX System, Sunday
- 21 Administering Your Micro UNIX System, Friday
- 22 Database Management on Your IBM PC, Friday
- 23 Database Management on Your IBM PC, Saturday
- 24 UNIX for the IBM PC, Friday
- 25 UNIX for the IBM PC, Sunday
- 26 WordStar the Easy Way, Saturday
- 27 WordStar the Easy Way, Sunday
- 28 Word Processing Using UNIX, Sunday

- 29 Shopping for Your UNIX, Friday
- 30 Shopping for Your UNIX, Saturday
- 31 Evaluating Spreadsheet Programs, Friday
- 32 Evaluating Spreadsheet Programs, Saturday
- 33 Evaluating Word Processing Programs, Friday
- 34 Evaluating Word Processing Programs, Saturday
- 35 Avoiding Software Rip-offs, Saturday

Payment by:

____ Visa # _____ Exp. date _____

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____ Check or Money Order

Cost of Seminar(s) _____

Faire Registration _____

Total _____

Name _____

Address _____

City _____ State _____ Zip _____

Phone _____

For information about registration contact: Computer Faire, Inc. Seminar Desk, 611 Veterans Boulevard, Redwood City, CA 94063 (415)364-4294.

MICROCOMPUTER ALL-STAR



"The industry is torn, spread-eagled between IBM capability and windowing software—we may not survive it." George Morrow



"AT&T and IBM's competition for control of the standards in office automation will be the data processing battle of the century." Jean Yates



"The issue will not be user-friendly, but user-familiar. Programmers must define problems in the terms of the needs of the user—not neat packages convenient to the programmer." Gordon Eubanks



"In the future the term compatible will slip into the footnotes of our industry's history and will be replaced by the term standard." David Bunnell



"The merger of telephone and personal computers will revolutionize the way we do office work." Dr. Federico Faggin

The All-Star presentations will be in the Crystal Ballroom at the San Franciscan Hotel, located on Market Street just one block from the Civic Auditorium. The ballroom, which holds 500 people, is a traditional location of the Computer Faire for its most important sessions and addresses.



"The industry is on the verge of a total new style of personal computing. The combination of cheap, high video performance PCs, new user interface technology, networking and a new generation of applications will mold the style." Barry Folsom



"Currently personal computers are essentially toys in comparison to their pervasive potential when we give them access to large data bases for use in significant decision-making." Jim Warren

R
DAYS

9th West Coast Computer Faire March 22-25, 1984

San Francisco Civic Auditorium & Brooks Hall

BILL GATES

CEO
Microsoft
Thursday 1:00

EDWARD BENNETT

President
Rockwood Systems
Corporation
Thursday 2:00

ROBERT HARP

CEO
Corona Data
Thursday 3:00

GARY KILDALL

Chairman & CEO
Digital Research, Inc.
Thursday 4:00

BARRY FOLSOM

Rainbow Group Manager
Digital Equipment
Corporation
Thursday 5:00

DAVID COLE

President & CEO
Ashton-Tate
Friday 11:00

FEDERICO FAGGIN

President
Cygnet Technologies, Inc.
Friday 12:00

CHUCK PEDDLE

Vice-Chairman
Victor Technologies
Friday 1:00

GORDON EUBANKS

Chairman
C & E Software
Friday 2:00

ADAM OSBORNE

President & CEO
Software Seed Capital
Corporation
Friday 3:00

PAT McGOVERN

Chairman of the Board
International Data
Corporation
Friday 4:00

DAVID BUNNELL

Chairman
PC World Communications
Saturday 11:00

JEAN YATES

President
Yates Ventures
Saturday 12:00

GEORGE MORROW

Chairman
Morrow Designs
Saturday 1:00

STEVE WOZNIAK

Co-Founder
Apple Computer
Saturday 2:00

BILL GODBOUT

President
CompuPro, A Godbout
Company
Saturday 3:00

JERRY POURNELLE

Columnist
BYTE Magazine
Saturday 4:00

JIM WARREN

President
Wireless Digital, Inc.
Video Initiative
Saturday 5:00

AmbiSet Offers Personal Processing with Advanced Telephone Features

Ambi Corporation of Stamford, Connecticut has introduced AmbiSet, an integrated voice/data executive workstation. The product automates business communications functions by combining advanced telephone features with a personal processing capability that can be upgraded to include full compatibility with IBM and MS-DOS computers.

Measuring 11" x 16", the 6½ lb. "AmbiSet" looks very much like a sophisticated business telephone with the addition of a full travel standard typewriter keyboard and a 8x80 character LCD screen. Internally, the AmbiSet uses a 16 bit Intel 8088 microprocessor and has a software architecture that is compatible with the IBM Personal Computer. The AmbiSet is designed to allow for the addition of an optional free standing mass storage capability and a full size CRT. A key feature of the AmbiSet's communications capability is that it is fully compatible with existing analog telephone lines; both pulse and rotary types. Apart from this conventional telephone capability, the AmbiSet also features a 300-1200 Baud, user-selectable "smart modem" which allows automated communications with both internal and external data bases.

The AmbiSet has 128 Kbytes of RAM available for the various general purpose messaging functions, plus an additional 64 Kbytes of battery backed CMOS RAM that supports a 250 entry "fast dial" directory—essen-

tially an "electronic rolodex." Further, there is another 45 Kbytes of EPROM that is specially set aside as "personality modules" which allow the AmbiSet's ten function-keys to be custom programmed to exactly meet a specific communications need. It is possible to create any combination of speed, code, protocol, or command sequence, and have it reside in a single keystroke, including complex log-on and password procedures.

The AmbiSet also has a standard personal processing capability. Through the use of the numeric keypad, the AmbiSet can emulate a standard algebraic programmable calculator. This enables the user to run formulas and equations for advanced business and scientific calculations while talking on the telephone. If more elaborate computing power is needed, the AmbiSet can be expanded into the AmbiStation capability by accessing a CRT and disk drive unit which allows running of commercially available MS-DOS software.

In the area of office productivity features there is a clock/calendar/alarm function. Replacing the old fashioned "pink slip" telephone messages, the AmbiSet Message Center allows a remote terminal on a secretary's desk to electronically transmit incoming messages and information directly into the AmbiSet's memory. Sequentially displayed on the 8 x 80 LCD screen, these messages can be quickly reviewed for follow-up action.

If a message requires a return call, a single keystroke will speed dial the number on the received memo.

An electronic "activities calendar" divides a rolling 30 day period into 15 minute increments for activities management. A single keystroke will bring the calendar onto the screen, and can be quickly scrolled to review appointments and key dates during the coming month. This calendar can also be accessed from a remote terminal to add new appointments, reschedule meetings, and if desired, an audio/visual alarm can be added to especially important commitments.

Since it is "systems independent," the AmbiSet requires only "plug-in" installation without modification to the installed base of analog PBX systems or interruption of everyday service. But, it may also be integrated with data communications devices and other peripherals such as printers, mass storage devices, and Local Area Networks.

For further information, contact: Ambi Corporation/Marketing Services Group, 2083 Landings Dr., #25, Mountain View, CA, 94043, (415) 968-3555.

Check Out the User Group Room at the Faire

RDS Database System on IBM PC

Relational Database Systems, Inc. (RDS), has announced that its Informix database product is now available on IBM Personal Computers and other computers running the MS-DOS operating system.

Introduced in early 1981 as a database management system for Unix-based micro-and mini-computers, Informix offers MS-DOS system users all the capabilities familiar to users of the multi-user Unix version. These capabilities include: query-by-forms, custom data entry screens, a full featured report writing language and an ad-hoc query language. Informix incorporates the advanced features required for business applications such as audit trail facilities, and the ability to handle large databases and files.

"Because Informix is menu-driven, and incorporates extensive help features, the system is ideally suited for business professionals who are using a personal computer, such as the IBM PC, XT or equivalent, to manage their data," said Roger Sippl, president of RDS. "It also gives systems integrators and applications builders the ability to quickly adapt their Unix-based applications to the MS-DOS world." With the MS-DOS version of Informix, RDS will reach users of low-end micro-computers.

For further information, contact: Laura King, RDS, 2471 E. Bayshore Road, Suite 600, Palo Alto, CA, 94303, (415) 424-1300.

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Qualified Faculty Leads Fee Seminars

This year's Computer Faire offers special training seminars on several of the most popular software packages, operating systems, and compilers. Available to attendees for a fee, the seminars will be presented by two independent microcomputer education companies—International Technical Seminars and Know-How Inc.

Jim Joyce, President of International Technical Seminars, will present the following subjects: Doing the Faire, C by Example (C is a new advanced computer program language), UNIX for Business, and How to Prevent Software Ripoffs.

Know-How, Inc. will conduct seminars on the following software packages: WordStar, Lotus 1-2-3, Microsoft Word, dBaseII, IBM PC and DOS.

International Technical Seminars, based in San Francisco, was founded in 1980. The company provides seminars, consulting, and documentation primarily on the UNIX operating system. The instructors selected to teach the ITS courses are the leading UNIX developers in the industry. As a supplement to the seminars, students will receive a packet of materials developed by ITS.

Also headquartered in San Francisco, Know-How, Inc. was founded in August, 1983. Using the IBM PC, the company teaches courses in a classroom setting, on the leading business applications packages. Dr. Lawrence

J. Magrid, past Editor of *PC World Communications*, and Know-How's Vice-President has organized the series of courses to be presented at the Faire.

K-H's Instructors:

Stephanie Burns

Stephanie Burns has been involved with computer education for more than 10 years. She has produced and presented seminars for more than 100 major organizations and has written several computer tutorials. She is currently serving as a curriculum consultant for Know How, helping to plan and coordinate activities at the West Coast Computer Faire.

Bill Grout

Bill Grout is the co-author of *Word Processing with the IBM PC* (soon to be published by John Wiley and Sons) and is a regular software columnist for the *San Francisco Chronicle*. He has written for several computer magazines including *PC World*, *PC Magazine*, and *Popular Computing*. He has served as senior educational consultant at Bank of America and has developed training materials for numerous corporations.

(continued on page 27)

Three Conference Topics

Three conference topics to be presented at the 9th West Coast Computer Faire will include portable computing, IBM PC modeling, and online information services.

David Ahl

David Ahl, Editor-in-Chief of *Creative Computing* magazine, will present a paper entitled "Will Notebook Computers Revolutionize Computer Usage?" on Friday, March 23 at 4:00 in Room 316 of Civic Auditorium. His presentation, directed to a general end-user audience, will describe the various models of portable computers on the market and their increasing usage by executives, educators, small businesses, and computer novices. According to Ahl, the portability and capability of these machines makes them especially useful during travel.

Ahl will also discuss how the notebook computer may be the key to overcoming executive "technophobia", the fear of using computers. *Creative Computing*, founded in 1974, is the oldest magazine in the computer industry.

Jeffrey Perrone

Jeffrey Perrone, of the management consulting firm Jeffrey Perrone & Associates, will speak on "Expert Systems Get Personal—Modeling Expertise with the IBM PC," on Friday, March 23, at 2:00 in Room 316 of

Civic Auditorium.

His talk will describe the operation of the expert system—a computer-based system which uses knowledge to give expert level advice. Perrone will discuss the impact of expert systems on the decision-making processes of business and professional organizations. The conference is aimed at management and technical people involved in decision-making roles.

Perrone will also detail the use of Expert Ease, a generator that runs on the IBM PC.

James Maloney

James Maloney, marketing representative of Dialog Information Services, will present a paper entitled "Knowledge Index: Or What It Took to Have a Dialog with the Personal Computer" during the Faire. It will be directed to home computer owners and to developers of communications software. His talk will be presented on Friday at 4:00, in Room 315 of Civic Auditorium.

Maloney will detail the operation of the Knowledge Index, which is an on-line information service for home computer owners who have professional research needs. The Knowledge Index currently consists of 23 data bases covering a variety of areas ranging from medicine and law to education and finances.

User Groups We've Heard From

These are some of the Computer User Groups that we have talked to about the Faire.

These groups are organized to serve both the new user and the experienced computer pro. They can provide assistance with computer problems, and give members an opportunity to exchange ideas and compare experiences with each other. Accessing public domain software is often facilitated through a User Group, too.

If your group is not listed, or you would like to change some information, please send it to *Random Access Guide*, Computer Faire, Inc., 611 Veterans Blvd., Redwood City, CA 94063.

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P.O. Box 18473
San Jose, CA 95158
Joe LeBlanc (408) 745-6200

AMUS

735 Walnut Boulder, CO 80302
Robert Cooper (303) 449-6917

APL Bay Area Users Group

514 Wisconsin
San Francisco, CA 94107
Bob Korsan (415) 854-7600,
(415) 282-9051

Apple Hardware Hackers

P.O. Box 550
San Carlos, CA 94070
Bob Runyon (415) 593-0824

Apple Sac

8859 Swallow Way
Fair Oaks, CA 95628
Andy Anderson (916) 355-0555

Bay Area Atari Users Group

P.O. Box 50459
Palo Alto, CA 94303
Gene McCreary (408) 629-7494

Bay Area Micro Decision Users

Association
P.O. Box 5152
Berkeley, CA 94705
Sypko Andrae
(415) 658-0152

Bay Area SCRIPT Users Group

CSG-3 Federal Reserve Bank of San Francisco
101 Market St.
San Francisco, CA 94120
Mike Rood
(415) 974-2445

Christian Computer Users Group

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Sunnyvale, CA 94086
(408) 243-3888
Harvey Teas
(408) 243-3888

Columbia User Group

P.O. Box 210547
San Francisco, CA 94121
Judith Sager
(415) 221-2339

Computer Professionals for Social

Responsibility East Bay
P.O. 9026 Berkeley, CA 94709
Bruce Joffe
(415) 768-0288

Computer Professionals for Social

Responsibility Palo Alto
437 Mundel Way
Palo Alto, CA 94022
Dave Caulkins
(408) 257-9963

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Responsibility San Jose
P.O. Box 53197 San Jose, CA 95153
Jack Kroll
(408) 463-2458

dBasell User Group—Silicon Valley

P.O. Box 190
Mountain View, CA 94042
Keith Coye (408) 629-4059

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(continued on page 22)

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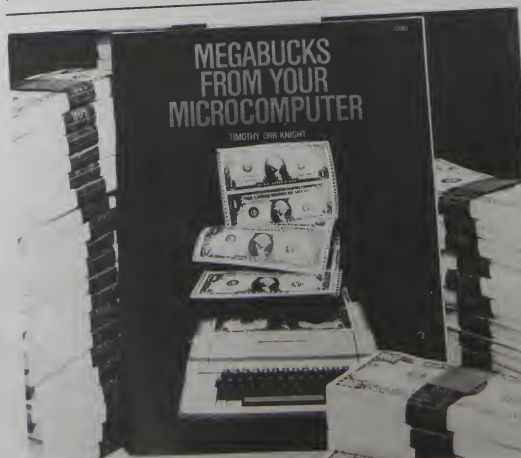
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Megabucks from Your Microcomputer, by Tim Knight, offers advice on buying the right computer to begin with, and on how to get the best possible return on the investment. It explains how to write and market software, magazine articles and product reviews. For further information, contact: Howard W. Sams & Co., Inc., 4300 West 62nd St., Indianapolis, IN 46268, (317) 298-5400. The book retails for \$3.95.



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Time to Buy...
continued from page 7

- erally referred to as word processing.
- **Data capture and retrieval**—frequently called data base management.
 - **Computation.**
 - **Financial analysis**—popularized by the spreadsheets like VisiCalc and 1-2-3.
 - **Report generation**—many of the accounting packages also fall into this category.

Using this list, rank these items into the order of tasks that you think are the most useful for you. Write an A against the first, B against the second, etc. What would happen if you obtained a 10 percent increase in efficiency on your top priority tasks; a 15 percent increase; a 25 percent increase, even a 75 percent increase?

What increase in efficiency will you require for the system to begin paying for itself? Be hard-nosed about it.

Now, armed with this information, try to find the off-the-shelf package that comes closest to doing the job. To help you, work backwards from the results (usually a document or report) you need. Trace back to find out where the information comes from. How should it be entered into the computer? Remember that the most consuming part of using a computer is the time required to enter text and data; that is, the operator is usually the slowest element in the system.

Recognizing the necessity for accuracy and the need to enter text and data as easily and intuitively as possible, test that part of the software with the person who will actually be using it. The program should be protective of the operator; protecting against the entry of unreasonable data, allowing the operator to pick up typographical or other errors without a lengthy procedure.

Having established what your needs are, and how best you can use your computerized workstation; and having investigated the software packages that meet your requirements, you are now ready to begin narrowing the search for hardware.

In all probability the major parameters will be clear. If the software requires a sizeable memory, you will probably look at 16-bit computers, as they support large internal memories. On the other hand, if the software fits comfortably in an 8-bit computer (within the 64K that is typical for such systems), you may find those ma-

chines most cost-effective for your requirements.

The other major parameter is mass storage. This is where you maintain databases and text files. It is independent of the amount of internal memory the software needs. Generally speaking, you will be making a choice between removable floppy disks, which hold from 80,000 to 1-million characters, and hard disks, which hold from 5-million characters all the way to 40-million plus.

Your mass storage requirements are determined by the amount of information you need to have readily accessible, without frequently changing floppy disks. For example, if a mailing list, or customer base is in the area of 1-2000, floppy disks are fine. However, if you have a 30,000 name file, hard disks are the only practical way to go.

The more packages you integrate (for example, several accounting programs that interact, such as general ledger, accounts payable, accounts receivable and inventory) the more likely you will require hard disk storage.

Now you can examine some of the other features which are desirable. These are usually features of comfort and appearance. Does the keyboard have a nice touch? Is it important that the keyboard be detachable? Does the monitor screen tilt? Is the amount of space the computer takes up on the desk (footprint) critical? Is weight a factor?

Balance all these considerations against cost and projected savings and/or increases in office efficiency. If you have done as much planning as suggested, in all likelihood you will make a good choice.

There is one final factor that must go into the equation, and that is the matter of training. It is usually best to get up to speed as rapidly as possible. The more knowledgeable the operator(s) the less risk of losing, and re-entering, text and data. The less early frustration, the greater the willingness for the operator to expand the uses of the computer, and hence, the faster the payoff. Training is not cheap. Budget at least 20 percent of the system cost, or 50 percent of the cost of the most-used software package.

And if you still need more encouragement, remember that microcomputers have proven their value to your competitors. To stay in the ballgame, this should be your year to join the computer generation.

Jack Star is a microcomputer systems consultant based in the Boston area.

Educational Forums are for New Users

New computer users will have an unprecedented opportunity to survey the hardware and software marketplace by attending the educational forums offered at the Faire. In each forum, several vendors will each present their product, and an independent moderator will lead discussion on the similarities and differences among the products.

Network vs. Multi-user

Thursday, 3:00-5:00, Gold Room, Holiday Inn

1. Digital Research Corporation
2. NorthStar
3. 3Com Corporation
4. Gifford Computers

Word Processing

Friday, 11:00-2:00, Gold Room, Holiday Inn

1. MicroPro
2. Microsoft
3. Sorcim
4. Bruce & James
5. Samna

User Interface/Operating Environments

Friday, 2:30-5:30, Gold Room, Holiday Inn

1. VisiCorp
2. Microsoft
3. Digital Research Corporation
4. Apple
5. Hewlett-Packard
6. Quantum

Spreadsheets

Saturday, 11:00-1:00, Gold Room, Holiday Inn

1. Microsoft
2. Chang Labs
3. Sorcim
4. VisiCorp

Accounting Packages

Saturday, 1:30-3:30, Gold Room, Holiday Inn

1. MBSI
2. TCS Software
3. Champion
4. Solomon

Database Management Systems

Saturday, 4:00-6:00, Gold Room, Holiday Inn

1. Ashton-Tate
2. MicroRim
3. Software Publishing

S-100 Bus Today

Sunday, 12:00-2:00, Gold Room, Holiday Inn

1. CompuPro
2. Cromemco

Training

Sunday, 2:30-4:30, Gold Room, Holiday Inn

1. Video Initiative
2. Cdex

Integrated Software Systems

Sunday, 12:00-2:00, Crystal Ballroom, San Franciscan Hotel

1. Chang Labs
2. Lotus Development Corporation
3. Context Management Systems
4. Open Systems

Advanced Microprocessors

Sunday, 2:30-4:30, Crystal Ballroom, San Franciscan Hotel

1. Intel
2. Zilog

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☐ Production
☐ Systems Analysis/Programmer
☐ Computer Specialist
☐ Other (Specify) _____

My business/profession

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☐ Accounting/Finance/Banking
☐ Manufacturing
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☐ Medical/Health Care/Legal
☐ Insurance
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☐ Government
☐ Computers
☐ Wholesale/Retail
☐ Other (Specify) _____

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User Groups
(continued from page 19)

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Suite 101
Walnut Creek, CA 94596
Robert LeBouef
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San Francisco, CA 94122
Scott Reed
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Riley Marries
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Jeff Haas
(415) 753-6555

HP International Users Group
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Mountain View, CA 94040
Tom Hamilton
(415) 941-9960

Homebrew Robotics Club
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Palo Alto, CA 94306
Richard Prather
(415) 494-8499

Jefferson State Computer Users Group
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N. Newman
(503) 770-4120

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Dennis Fiske
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Los Altos, CA 94022
C. Lindell
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Modesto Turlock IBM PC Users Group
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Turlock, CA 95352

Napa Valley Commodore Computer Club
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Mick Winter
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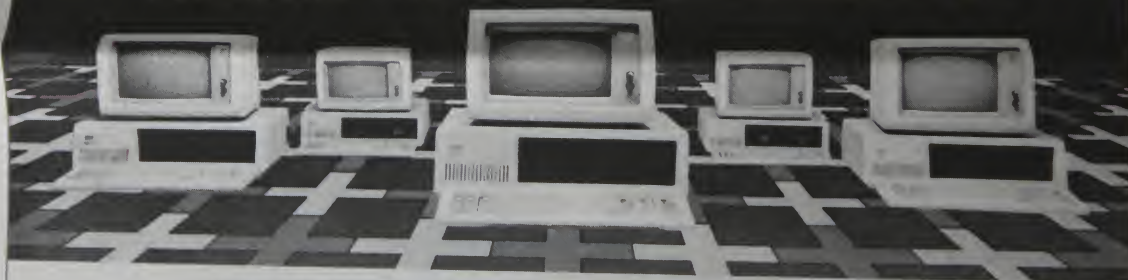
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Rita Carr
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David Harris
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Betty McBride
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TRS Nybbbers

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Saturday

UCSD Tutorware — an introduction to Pascal including UCSD & Apple
Day: Saturday
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Room: 407

How to be More Productive on Your Microcomputers
Day: Saturday
Time: 1:30—3:30
Room: 315

Tricks of the Trade
Day: Saturday
Time: 3:00—4:00
Room: 407

Evaluating and Disseminating Robotic Aids for Human Users
 B.G. Engelhardt and Roger A. Ward
 Rehabilitation R & D Center
 3801 Miranda Ave. MS 123
 Palo Alto, CA 94304

Karel the Robot: A Concrete Approach to Learning Pascal Programming
 Richard Patis
 Department of Computer Science
 Stanford University
 Stanford, CA 94035

Children and Computers
Day: Saturday
Time: 11:00—1:00
Room: 401

Computers in Kindergarten: Requirements for an Early Childhood Education Package
 Marlene Anne Bumgarner, Writer
 P.O. Box 1326
 Morgan Hill, CA 95037

Intuit the Mind: Children Learn Computers
 Michael Potts, Director
 Caspar Institute
 P.O. Box 88
 Caspar, CA 95420

A Comparison of the Attitudes and Achievement of Students Using Two Computer Spelling Programs
 Caroline Beverstock and Margie Beverstock
 354 Walsh Road
 Atherton, CA 94025

Telecommunications II
Day: Saturday
Time: 11:00—2:00
Room: 404

Me and My Modem, Introducing Telecommunications
 Jay Schrock and Jerry Willis
 2712—21st Street
 Lubbock, TX 79410

Modem 7 Protocol
 Larry Hughes, CEO
 Mycroft Labs, Inc.
 P.O. Box 6045
 Tallahassee, FL 32314

Graphic Design on Microcomputers
Day: Saturday
Time: 11:00—1:00
Room: 407

DRAMS, PALs & a Side Order of Encoders, PLEs
Day: Saturday
Time: 1:00—3:30
Room: 401

High Speed Bipolar PROMs Find New Applications as Programmable Logic Elements
 Vincent J. Coli and Frank Lee
 Monolithic Memories Inc.
 2175 Mission College Blvd.
 Santa Clara, CA 95050

The ABC of Dynamic Rams
 Zwie Amitai
 Monolithic Memories Inc.
 2175 Mission College Blvd.
 Santa Clara, CA 95050

The A to Z of High-Speed Priority Encoders
 Chuck Hastings and Zwie Amitai
 Monolithic Memories Inc.
 2175 Mission College Blvd.
 Santa Clara, CA 95050

Low Cost PAL Programming
 Eric J. Mattern, Applications Engineer
 Structured Design
 1700 Wyatt Drive
 Santa Clara, CA 95054

Awakening From the Hacker's Nightmare
 Tom Pittman
 P.O. Box 6539
 San Jose, CA 95150

Symbol Tables I Have Known & Loved
 Edwin Rosenzweig, President
 Pterodactyl Software
 200 Bolinas Road, Ste. 27
 Fairfax, CA 94930

Some Problems Neither My Computer Nor I Can Solve—Yet
 Richard V. Andree, Professor of Mathematics
 University of Oklahoma
 Norman, OK 73019

Toddler Burnout
Day: Saturday
Time: 1:30—3:00
Room: 407

Pre-School Computing—Are We Pushing Our Kids Too Far?
 Fred D'Ignazio, Assoc. Editor
 Compute!
 Kathy Chin, Reporter
 Info World

Using the E-Corn System
Day: Saturday
Time: 1:30—4:00
Room: 415

**Carl Street, President
 CJ Street & Associates
 Claire Fraiser
 USPS**

Opportunities for Writing Computer Books and Software
Day: Saturday
Time: 2:30—4:30
Room: 308

**Jane Isay, VP and Director
 Electronic & Technical Publishing
 Harper and Row**

**David Miller, Executive Editor
 Addison-Wesley**

**Theron Shreve, Editor
 John Wiley Publishing Co.**

**Kenzi Sugihara, Director
 Electronic Publishing
 Bantam Books**

**Moderator: Michael Larsen, Partner
 Michael Larsen/Elizabeth Pomada Literary Agents
 1029 Jones Street
 San Francisco, CA 94109**

Robotics
Day: Saturday
Time: 3:30—6:00
Room: 401

Homebrew Robotics: The Next Step
 Richard Prather
 91 Roosevelt Circle
 Palo Alto, CA 94306

A Versatile Mobility System for Robots
 William H.T. La
 Rehabilitation R & D Center
 VA Medical Center
 Palo Alto, CA 94304

Numeric Processing
Day: Saturday
Time: 4:00—6:00
Room: 315

Adding Numeric Processing Capability
 Jim Hudson
 Hudson Associates

Trends/High Technology
Day: Saturday
Time: 4:00—6:00
Room: 415

32-bit Microcomputers Full 32-bit Microprocessors: The Next Generation
 Gene A. Finkler
 Silicon Valley Micro Inc.
 4010 Moorpark, #213
 San Jose, CA 95117

The Third Wave Hits Silicon Valley
 Chuck Hastings
 Monolithic Memories Inc.
 2175 Mission College Blvd.
 Santa Clara, CA 95050

Softalk Awards Presentation
Day: Saturday
Time: 5:00—6:00
Room: 308

Sunday

Learning Disabled Students and Computers
Day: Sunday
Time: 12:00—2:00
Room: 315

Extending Computer Use to Enhance the Skills of Learning Disabled Students
 Carol A. Zepecki, Resource Specialist
 Morgan Hill Unified Schools
 17371 Lakeview Drive
 Morgan Hill, CA 95037

Microcomputers & Learning Disabled Students: Special Tools for Special Needs
 Steven Spencer
 Morgan Hill Unified School Dist
 17125 Aspen Way
 Morgan Hill, CA 95037

Using Computers for Languages Other Than English
Day: Sunday
Time: 12:00—2:30
Room: 308

**Richard and Nora Dauenhauer
 Carlton Smith, David Kateek
 Sealaska Heritage Foundation
 One Sealaska Plaza
 Juneau, AK 99801**

**Dr. Ron Scollon
 Gutenberg Dump, Ltd.
 Haines, AK
 Dr. Jim Levin
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Conferences ... (continued on page 26)

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9th West Coast Computer Faire Conference Program

Sunday

Conference Program ... continued from page 24

Personal Computing Backlash I
Day: Sunday
Time: 12:00-2:30
Room: 316

Computing and the Decline of the English Language
John A. Barry
977 3rd Avenue
Redwood City, CA 94063

The Emperor's New Computer, or What If We're Not Having a Computer Revolution?
John Bear
2730 Stuart Street
Berkeley, CA 94705

Learning: The Joy of Doing It Badly
John Peers
Treemark, Inc.
1004 Stewart Dr.
Sunnyvale, CA 94086

The Morning After: Anti-Computer Backlash and the Arrival of the Mass Market Home Computer
Fred D'Ignazio, Associate Editor
Computer!
505 Edwardia Drive
Greensboro, NC 27409

Are Home Computers Finally Coming into Their Own?
Ken Uston
2140 Taylor St. # 1201
San Francisco, CA

Computers and Physically Disabled Students
Day: Sunday
Time: 12:00-2:00
Room: 401

Making Apple Computers Accessible to Blind Children
Susan H. Phillips, Project Director
Sensory Aids Foundation
1941 Tasso Street
Palo Alto, CA 94301

Computers in Education
Day: Sunday
Time: 2:30-4:30
Room: 315

Laying a Solid Foundation for Computers in the Schools Through Research and Critical Analysis
Dee LaMont Johnson, Associate Professor
Cleborne D. Maddux, Associate Professor
College of Education
Texas Tech University
Lubbock, TX 79409

Logo in Education
Day: Sunday
Time: 2:30-4:30
Room: 401

Teaching Logo in Elementary and High School
Dick Monard
Digital Research Inc.
160 Central Avenue
Pacific Grove, CA 93950
The Future of Logo
Mark W. Friedland
Krell Software Corp.
1320 Stony Brook Road
Stony Brook, NY 11790

Graphics Day: Sunday
Time: 3:00-5:00
Room: 308

Instruction-Generated Graphics
Kevin Cheung, Software Engineer
Paul Terry, Software Engineer
Flyghts of Fancy, Inc.
9444 Alcosta Blvd.
San Ramon, CA 94583

Fractal Mountains on Personal Computers
Mike Higgins
P.O. Box 197
Duncan Mills, CA 95430

Personal Computing Backlash II
Day: Sunday
Time: 3:00-5:00
Room: 316

Why Isn't There More Good Documentation?
Van Wolverton
800 Lockwood Lane
Scotts Valley, CA 95066

Psychological Consequences of Computer Use: Computer Phobias and Computer Addiction
Alan J. Fridlund, Ph.D.
Psychology Service 116B
Martinez VA Medical Center
Martinez, CA 94553

Please Don't Read This
Martin L. Dean, President
Select Information Systems
919 Sir Francis Drake Blvd.
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Wednesday, March 21
STEVE WOZNIAK
INVENTOR OF THE APPLE COMPUTER
DR. HENRY TROPP
LEADING AUTHORITY ON THE HISTORY OF COMPUTING. Computers: Where We've Been (20/20 Hindsight)

Wednesday, March 28
GENE AMDAHL
FOUNDER AND CHAIRMAN, TRILOGY SYSTEMS CORP./FOUNDER, AMDAHL CORP.
ALAN KAY
ATARI, INC., FELLOW. Computers: Where Are They Going?

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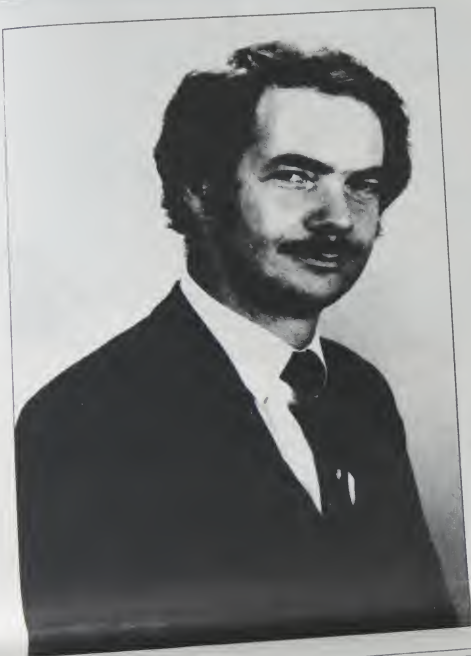
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Seminar Instructors ... continued from page 18

Lawrence J. Magid

Lawrence J. Magid is Executive Vice-President of Know Know and is a nationally syndicated computer columnist for the *Los Angeles Times*. He is the author of several upcoming computer books including the *Know How Guide to the IBM PC* (Know How/Prentice Hall, 1984) and *Telecommunications and the IBM PC: A Window on the World* (John Wiley and Sons, 1984). Magid is a former Editor of *PC Magazine* and currently serves as a contributing editor of *PC World Magazine*. He has written numerous user guides for software and hardware products including IBM's original manual for its EasyWriter word processing system and the user's manual for Morrow Designs Micro-Decision computer.

Andrew Williams

Andrew Williams is the author of three upcoming books on electronic spreadsheets. His books include *What If...A Guide to Using Spreadsheets on the IBM PC* (John Wiley and Sons), *Know How Guide to SuperCalc 1.2 & 3* (Know How/Prentice Hall), and a book on Lotus 1-2-3. He is a Contributing Editor to *PC World* and *MacWorld* Magazines and is on the faculty of the University of California at Berkeley.

ITS Instructors:

Sharon Boucher

Sharon specializes in fast prototyping using *awk*, the super-subset of

C available on UNIX, and the Bourne shell.

Steve Bourne

Steve wrote the standard UNIX shell (/bin/sh) that bears his name, and was at Bell Laboratories where UNIX was developed until moving to the west coast last summer. Other of Steve's contributions to UNIX include *adb*, the debugging program, and a best-selling book, "The UNIX System" (Addison-Wesley, 1983).

Sandy Emerson and Marcy Darnovsky

Sandy and Marcy are authors of the forthcoming book, "Database on the IBM PC" (Addison-Wesley, 1984), which forms the background for information to be presented in this seminar. Both are experienced consultants in the Bay Area.

Ann Hernandez

While at the University of California at Berkeley Ann started several micro-based computer laboratories for non-computer science students and staff. Ann has taught WordStar to hundreds in the business and university communities for four years. Her dynamic teaching ability combined with in-depth knowledge of the subject have earned her high praise from attendees.

Stan Kelly-Boothe

Stan claims to be the first graduate in Computer Science at Cambridge University in England. He is decidedly a veteran programmer, and knows most of the dialects of BASIC. His wide-ranging knowledge and wit will make this a most memorable

BASIC course.

Bill Tuttle

Bill is co-author of "C By Example" (forthcoming in 1984) with Jim Joyce. His expertise in C led to his being in charge of maintaining troff,

the UNIX typesetting program, while at the University of California at Berkeley. He is the author of several widely-distributed software packages, and a sought-after speaker at UNIX-oriented conferences.

Diskette Magazine Demonstrates PC Software

Are you tired of trying to judge software products by glossy ads and magazine reviews? If so, you may fall in love with *PC-Demo*, the first diskette magazine which mails demo programs of leading IBM PC software products to subscribers.

Three issues have been published to date. Each issue is "published" on a double-sided floppy diskette and contains 3 or 4 demo programs, a catalogue of *PC-Demo's* library of demo programs, plus a discount coupon good for \$6 off any software purchased from 800-Software of Berkeley. *PC-Demo* costs \$6 per issue (3-issue minimum subscription) and operates under MS-DOS 1.1 or 2.0 on IBM and IBM-compatible microcomputers.

Software demo programs are programs created by software publishers to demonstrate the features and performance of their products. Many of the newer demo programs are slick, interactive productions that convey the "feel" of a software package to potential purchasers and demonstrate the product's features more clearly than the product itself.

Recently, there has been a grow-

ing trend among software publishers to develop sophisticated demo programs to advertise their products. This trend may reflect a view that the best way to sell a product is to demonstrate it in the environment where it will operate—on the purchaser's own computer. Some of the demo programs included in the first three issues of *PC-Demo* are VisiWord, PCcrayon, Quickcode, Easywriter II, Financier, Jotto, and PC/FORTH. Future issues will contain demos of Volkswriter Deluxe, pfs:write, The Next Step and others.

According to Rick Alber, President of Soft Peddle, Inc. and publisher of *PC-Demo*, *PC-Demo* serves as a marketing link that benefits both software publishers and users.

Subscribers now number close to 1000 and the software demo library includes more than 100 titles. There is no charge to software publishers to have their software demo programs included on the *PC-Demo* magazine or carried in the library.

For further information, contact: Soft Peddle, Inc., 1724 Sacramento St., Suite 444, San Francisco, CA 94109, (415) 974-5134.

UNIX ...

(continued from page 12)

mands actually run **simultaneously**. The find takes a long time to go through the tree, and tar takes a while to write to tape. But as each filename is found, the pipe passes it along to be written out: since both programs run at once, total run time is about halved. You wouldn't want to wait till these programs were finished before you could use your fancy UNIX system, though—so just let them run by themselves, in what is called...

■ **Multitasking:** Did you ever have to wait for a program to run on your computer before you could do something else? On UNIX, you can decide anytime to run a program (or several at once) in "background", while you continue using your terminal for another project. Just imagine writing a BASIC program, while at the same time a C program is compiling and its documentation printing out! You don't even have to worry about compiler error messages cluttering your CRT screen, if you remember to redirect those to the printer as well. All you have to do is type a "&" at the end of any command line, and you immediately get the shell prompting you for your next command while your other project goes on its merry way.

■ **Multiuser:** On all but the very smallest UNIX systems, several people can use the computer at once. UNIX will take care of the details: if everyone wants to print simultaneously, the system sets things up so that data doesn't get mixed up in the printouts. It does this by automatically "spooling", or writing to disk files, all

output that is destined for the printer: then, printing it all in sequence, in background of course. To the user, it appears as if you have a 1,000,000 character/second printer.

Modems are supported, so people can dial up the system remotely (UNIX can change the baud rate to match the caller). People can also send messages to each other; either while they are logged on to the system, or as electronic mail files to be read at any time. Using the uu^cp package, you can even send mail to people at other UNIX systems: your machine will dial up their machine whenever the phone rates are lowest, and transfer the message unattended.

Naturally, with all these people on one system, havoc could result if a program (or unfriendly user!) ran wild. So UNIX provides various levels of protection by different mechanisms. The first comes when you initially log in to the system: if you don't enter the right password, you can't get in at all! The next is by protection bits: any user can set protection on his own files and directories, so that other users or programs can be prevented from reading, writing, or executing them. The highest level is by actual encryption of data—done easily on UNIX by the inclusion of a special encoding program that even CIA computers would have trouble cracking.

■ **Development tools and languages:** UNIX boasts an impressive range of utilities, languages, and development tools that are either expensive add-ons or unavailable on other operating systems. For example:

- the diff program can show the exact differences between two text files,

and can also help you change one file to match the other.

- as well as a compiler for the C language and an assembler; there are versions of FORTRAN, ratfor, and a dialect of BASIC supplied as standard. Available for many systems are COBOL, Business Basic, and Pascal. Also, cross-compilers and assemblers are common, allowing you to develop software for an entirely different machine.

- powerful software tools let you develop compilers for other languages or computers—even your own language for a particular application.

- word processing and typesetting can be done with the nroff and troff programs and the appropriate peripherals. Such devices as the Diablo series of precision printers, Tektronix graphics terminals, and Versatec plotters are supported, and can be used as easily as their more ordinary counterparts such as "dumb" terminals and line printers.

- utilities such as make and the Source Code Control System allow programmers to keep track of changes to their files, and get the latest version of their programs—or a specified older version—to compile and run automatically, even if the source code is spread out over many files managed by different people.

- **The Shell:** the "command interpreter" is the program that you spend most of your time interacting with when you use an operating system. On UNIX, the program that does this is called the shell, and much of the power of the system comes from this shell. The shell not only handles the I/O redirection mentioned above, but is actually

a programming language in itself. Complex data management functions, testing, and file manipulation can be done with shell commands alone, without having to "write programs" in a more traditional way.

Shell programming features include loops, if-then-else, "case" constructs, error handling, and process synchronization. Since the shell interprets commands as they are typed in, often such a "shell program" is composed right at the terminal, and it can be easily saved for future re-use.

The shell also permits you to "customize" the way UNIX responds to your commands. You can change the prompt character, have the system search in particular places for commands, use your own favorite names for UNIX commands, and run a predefined series of commands each time you log on to the system.

Is Anything Perfect?

With all these things going for it, UNIX seems like an ideal system. But there are a few disadvantages to UNIX which, while comparatively unimportant to a home user, could hamper its acceptability as a general-purpose commercial operating system:

1. **Security:** in theory at least, UNIX prevents unauthorized users from accessing or destroying data that doesn't belong to them. In practice, a great deal of caution is necessary when running a UNIX system to insure file security. There are several fairly well-known ways of bypassing the usual UNIX security checks. Also, the system does not adequately protect

(continued on page 30)

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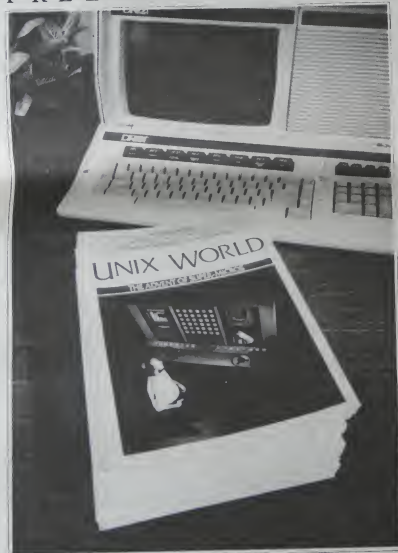
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UNIX

(Continued from page 28)

running, customer programs that take over all available system resources and leave UNIX to fend for itself. An experienced UNIX system administrator is usually needed to set it all to work.

2. Priority constraints: It is possible to require that an important program have exclusive use of the machine if necessary for high-speed calculations. Further, system resources such as memory or special devices cannot be reserved in advance, meaning a program that needs these resources will simply "bomb" instead of waiting for the resource if they are not available. Real-time re-

sources, crucial for process control or scientific or military use, are not available on UNIX.

3. Reliability: UNIX systems are generally thought of as fragile. A holdover from earlier systems which needed an expert, considered basic due to the complexity of the file system. Current versions are more robust and include programs to fix the file system automatically in case of a crash, but an expert will still be needed in certain occasions. While UNIX may not be perfect in this regard, it's also a good deal smaller than those commercial systems, which are far too big to fit on a microcomputer, and which need a full-time team of experts to keep running at all.

4. Other limitations: Because of the way that UNIX implements its hierarchical structure, the practical maximum number of servers-calls on a server system is less than might be otherwise. UNIX, designed as a time-sharing system for the purpose of efficient program development, is not always the appropriate choice of system for a large-scale applications-based computer system. However, the sheer power of some of the newer UNIX computers on the market, and their low cost, insures that many installations will be running UNIX anyway.

"What Machines Run UNIX?"

The first machines to run UNIX were the ones handy at Bell Labs: the DEC PDP-7, then the PDP-11/34 and PDP-11/70. For this reason, (also be-

cause they tend to be powerful and expensive) the DEC PDP-11 line of microcomputers has been almost exclusively associated with UNIX. Larger systems, such as the VAX, are also popular, and UNIX has even been ported to microcomputers.

But by far, the most exciting news for the greatest number of people is that UNIX now has been ported to almost every 16-bit microprocessor on the market, thus bringing the full power of UNIX within the reach of most small businesses and even some hobbyists. Also, new operating systems (known as UNIX "look-alikes") developed by companies other than Bell Labs have come on the market, offering similar capabilities to UNIX without the licensing headaches sometimes associated with the "real" UNIX system. Yet since AT&T announced the new System V version of UNIX, "binary" licenses (no source code included) to "real" UNIX are available from systems houses for as little as a few hundred dollars.

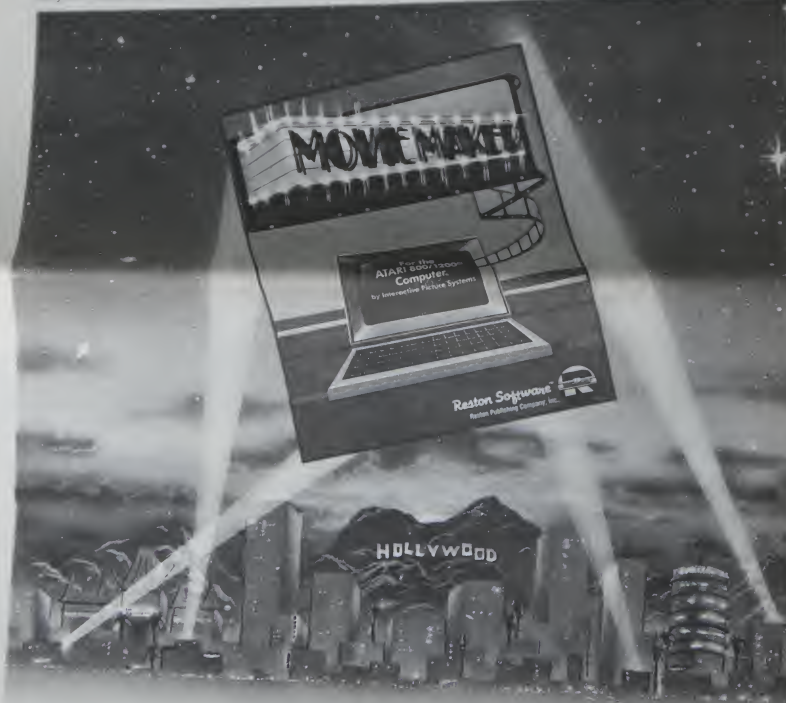
The most popular microprocessor to implement UNIX on at present is the Motorola 68000, because of its powerful instruction set, 32-bit internal data paths, and large addressable memory space. Some 68000-based UNIX computers are the Dual System 83 (an S-100 machine which was one of the first micro-based UNIX machines to be compatible with an industry standard bus), Codata's Multibus-based computers, and the Fortune 32/16, which has a "user-friendly" menu system which makes operation easy but hides most of the power of UNIX. It is popular as a single- or multi-user workstation in many large companies.

Then there are Z8000 and 8086/88 computers also—Zilog and Intel both sell their own UNIX-based machines. Zilog, the first microprocessor maker to support UNIX, has several high-performance Z8000-based computers available starting from around \$14,000. Intel's latest 86/300 series uses their standard Multibus, and is slightly more expensive. One of the best systems for small businesses is the Altos 586: a small, four-user system for less than \$8,000.

Even the IBM Personal Computer with hard disk (or PC/XT) can run Coherent for about \$500, or you can get a real UNIX derivative called PC/IX directly from IBM for \$900 (PC/IX, however, is only single-user). The fastest-growing section of the market is expected to be the 8086/8088-based area, due to IBM's announcement of PC/IX. What about 8-bit machines? A few enterprising firms such as Morrow Designs, Cromemco, and Microware actually have UNIX-like, multiuser, multi-tasking systems that run well on Z80 and 6809 computers. However, a system the size of UNIX generally needs the power and memory capacity of a larger processor.

The next 12 to 18 months will see a great deal of jockeying for position in the UNIX market, since AT&T and IBM are both expected to come out with powerful new UNIX-based machines. The eventual benefactors of this competition? You, as a computer buyer and user; you'll find better software and hardware for less money.

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Letters to the RAG

RAG—

A great idea, RAG. Now if you can curb your appetites for ads just a bit and keep upcoming issues interesting to readers (a service, in short) your purposes will assuredly be served. Nice balance, so far.

Waldo T. Boyd (Karl Andreassen)
Creative Writing
P.O. Box 86
Santa Rosa, CA 95441

Dear RAG,

In reading the recent article (by Tony Bove & Cheryl Rhodes) about public domain software, I was surprised to discover that the only source for IBM PC software mentioned in the article was that of the New York Amateur Computer Club (with 26 vol-

umes). No West Coast source was noted.

The San Francisco PC Users Group, which has a current membership of 600, has a continuously growing public domain software library. It currently consists of 72 volumes (both single and double-sided diskettes). Approximately five new volumes are added to the library each month. I believe this is the largest IBM PC library of its kind—more than 1340 different programs that actually run on a normally configured IBM PC. All the programs are in the public domain and may be freely copied and distributed. This software library includes almost all of the currently available "User-supported" programs (PC-FILE III, PC-WRITE, CHASM, FRED, KERMIT, EPISTAT, DATAACCOUNT,

STOCK MARKET ANALYZER, RBBS, PC-DIAL, GALAXY TREK, FORTH, FREEWILL, MODEM7, PC-PROF BASIC, ULTRA-UTILITIES, DISKCAT, FREE4 & 5, GENEALOGY, PC PICTURE GRAPHICS, LADYBUG, PC-ZAP, and TAX 456). Each volume has its own README file which documents what is available on that disk.

The San Francisco PC Users Group will exchange these diskettes for free with other IBM PC club libraries. Diskettes are available for purchase (\$5 a disk) by the public at our users group meetings (Fort Mason, Building A, third Monday of each month), or by mail (\$6 a disk). A catalog file of the entire library (which includes the README documentation of each library disk) is available on volume A-3.

For further information about this public domain software library, please contact the San Francisco PC Users Group, % Charlie Vella, Librarian, 4411 Geary Blvd. #33, San Francisco, CA 94118, (415) 387-2315.

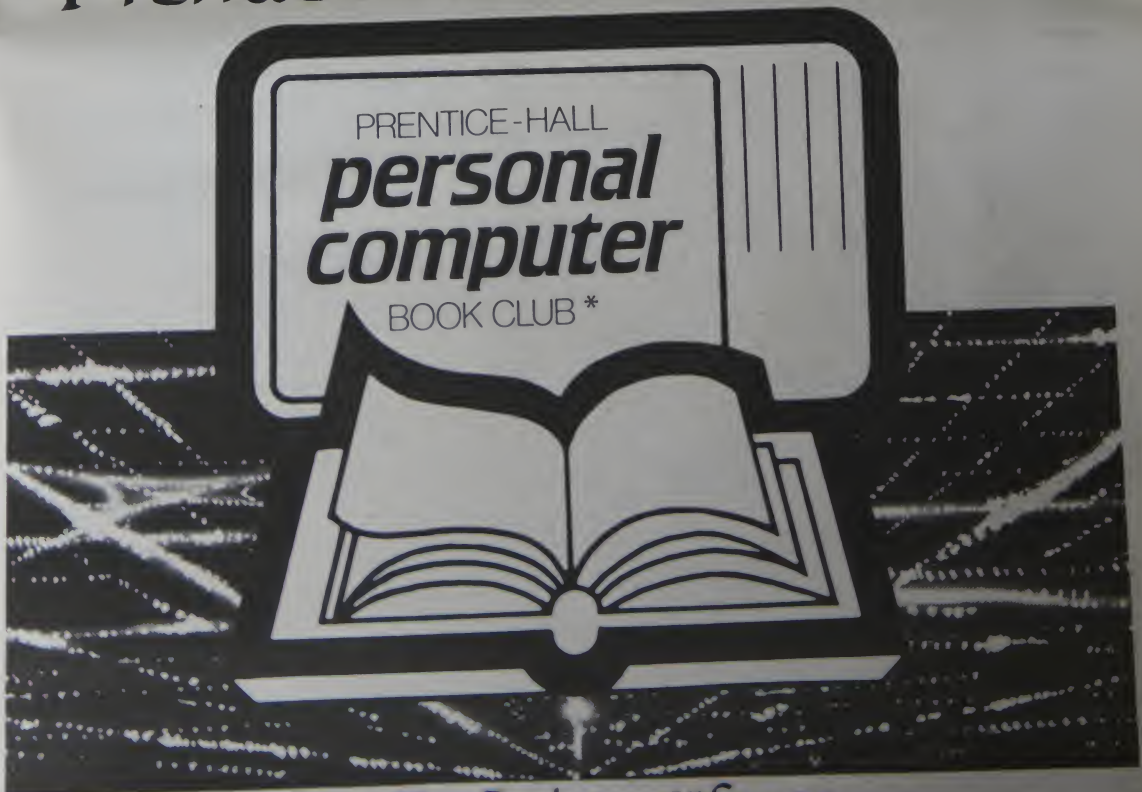
Sincerely,
Charlie Vella, Librarian
SF PC Users Group

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